

THE SCHOOL JOURNAL

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The Trend: What Is It?

IN a country as youthful as ours it is natural that we should oftentimes be deceived as to the significance of achievements affecting the promotion of civilization. Time and again we find that we have been congratulating ourselves upon having set the pace in a new direction, when in reality we have merely fallen in line with other countries. A device or rash supposition may be proclaimed far and wide as a new and wonderful discovery, which in older and calmer civilizations has long been disposed of, either among the venerated possessions or among the rubbish. On the other hand, really new ideas, which are bound to enrich the world permanently, are sometimes kept under a bushel, because their modest garb fails to attract attention to them as worthy objects of national pride. Not until the ugly duckling has developed into a magnificent swan does public recognition beam upon it, and then only after the admiration of the world has made us conscious of the new acquisition.

Consequently we find ourselves treated to the most conflicting opinions regarding our share in the world's work, bowing our thanks to those who shower praises upon us, pitying those who fail to discover anything noteworthy about us, and pouring out wrath over those who find fault with us.

Intrinsic merit cannot be measured by the hurraing of the crowd or other forms of public acclamation. Neither can we trust to the newspaper for well-balanced judgment. Even some of the most highly respected magazines have been known to have served as the innocent vehicles of preposterous claims of yellow scientists. The only rewards bestowed upon some of the real benefactors of the race have been glowing epitaphs. The principal reason for this state of things is our sublime disregard of the lessons of the historical past. Hence the lack of proper perspective in several divisions of human endeavor. In matters educational which concern us more directly this is especially notable.

A foreigner rarely succeeds in judging our public educational endeavors with any fair degree of justice. He naturally measures us by old world traditions and fails to make allowances for our youthfulness and to take account of the peculiar national aspirations which have impressed themselves more or less distinctly upon our schools. If he honestly tries to familiarize himself with

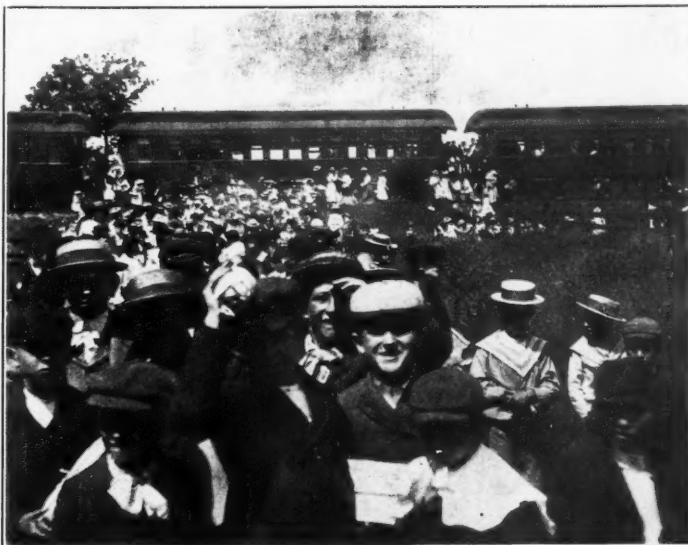
our ideals before placing an estimate upon the specific results of school work, he will find himself in the peculiar predicament of having to decide whom among educational leaders to accept as the best interpreter of American pedagogy. The astonishing divergence of views concerning fundamentals in public education cannot but baffle an ordinary visitor. Unless he is himself thoroly grounded in universal pedagogy and is a shrewd judge of human nature, he might as well abandon the quest. Among the living leaders in the school field whose names are most prominently in public print, who can be regarded as the true exponent of truly American public educational ideals?

Yet it is well that we should welcome every criticism coming from the outside that may help us to become conscious of our shortcomings. Tu quoque retaliations can only reveal an injured conceit and may cause us to lose the good opinion of friends. On the other hand, we

ought to arrive at some common understanding, based upon actual facts, as to just what we are aiming at. We shall then be in position to determine whether and where we are behind or ahead of the best models, and whether and where the existing differences redound to our glory or to our reproach.

THE SCHOOL JOURNAL is earnestly striving to aid in the establishment of just such standards and to bring before its readers the material best suited for making profitable comparisons in the various phases of schoolwork and edu-

cational philosophy. Some years since it collected the educational creeds of a number of the foremost leaders, in order to supply a much-needed basis for reaching definite conclusions respecting the ideas upon whose application, in practice, are built the best hopes for the American common school. The "creed" of Dr. John Dewey, of Chicago university, came nearest to voicing distinctively American ideals, harmonizing with our national aspirations in social and political life. The endeavors of Dr. J. M. Rice to establish, by closely scientific methods of comparison, the results achieved in the elementary schools were consistently supported in these pages, placing this periodical in a most unique position in this respect. The most promising practical outgrowth of Dr. Rice's great work, the Society of Educational Research, which already counts among its members several hundred serious-minded school men, was supported from



The largest vacation school excursion in the world.

The Spry Vacation School, Chicago, at Beverly Hills.—Mr. Henry S. Tibbits is principal of the school of 850 pupils.



Pupils of the Lowthorpe School at Work in the Garden.

An article describing "What the Lowthorpe School is Doing" will be found on page 775. The school located at Groton, Mass.

the start; again, without one word of cheer from educational papers in this country, the *East Indian*, *British*, and other foreign periodicals regarded the matter as of consequence sufficient to be worthy of special notice.

School Gardening and Agricultural Training.

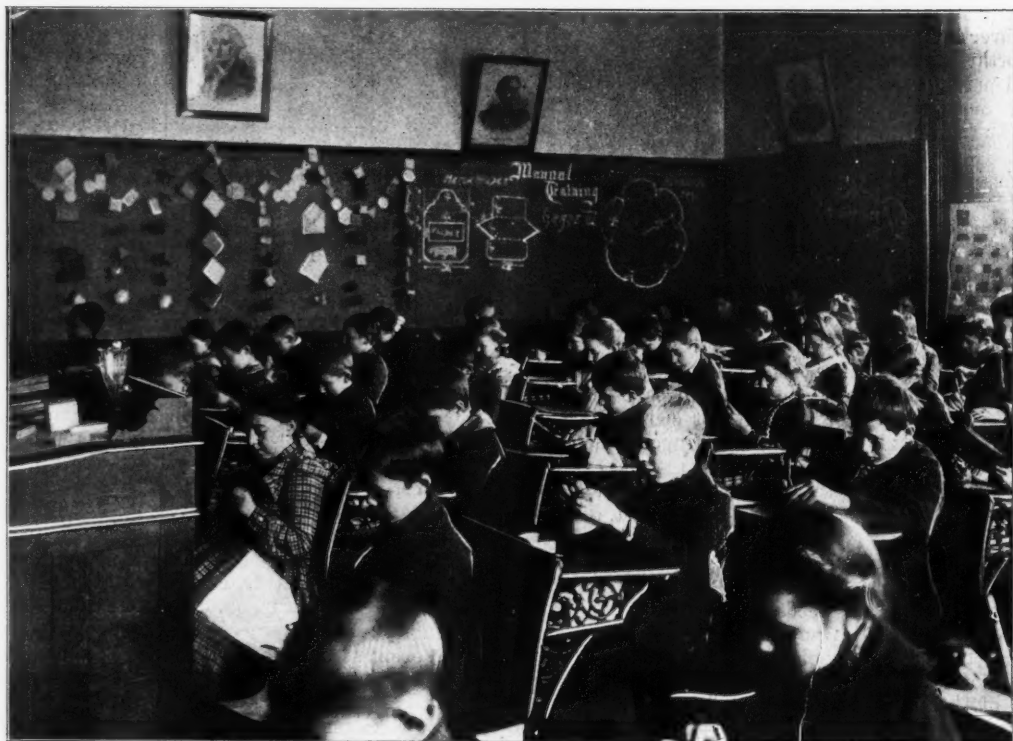
The present number is another evidence of THE JOURNAL'S desire to supply abundant, authentic, and interesting material affording opportunity for profitable comparison—in this case, as regards school gardening and agricultural instruction, most important phases of present-day economic education of the people. Along with articles and illustrations, setting forth what we ourselves have done and are doing, will be found descriptions of endeavors of other countries in the same direction, also a historical sketch of the development of the movement.

The editors are deeply cognizant of the fact that abundance does not necessarily mean completeness.

Physical limitations, if nothing more, would have rendered futile, efforts to produce something all-inclusive. But this number will certainly be accorded the credit of supplying the most comprehensive account yet published in America of the main evidences of the great economic movement here portrayed in descriptions and illustrations. Had space permitted there should have been included a report of the noteworthy experiment in agricultural and horticultural instruction planned for the rural population of the Dominion of Canada. As, however, it has been mentioned in a recent issue of THE SCHOOL JOURNAL the readers may easily supply the seeming deficiency. Moreover, an interesting account of the Canadian enterprise may be looked for at an early date, probably next week. If those who are pleased with the contribution offered in this souvenir number should know of other worthy evidences of a wise and healthy interest in school gardening the editors will thank them for any information they may send in.

Where Canada Leads.

On this side of the Atlantic Canada is leading the way in systematizing the various endeavors aiming at an improvement in the efficiency of the public instruction of the young in the rural districts. To the consolidation of small schools and the transportation of pupils to the central institutions, wise departures which with us are now under way in nearly one-half of the States, Canada has added a plan for supplying practical courses in scientific agriculture to communities that may be benefited by them. Two or three acres of land are to be provided for the purpose, adjacent to the most important schools in each county. Garden centers are also to be formed. Graduates of the Guelph Agricultural college serving as traveling instructors will teach boys the elements of forestry, horticulture, entomology and its relation to agriculture and horticulture, and physics and chemistry of



First Year Class in Cardboard Construction, at Birmingham, Ala. J. H. Phillips, superintendent of schools.



Chinese Girls of the South Gate Presbyterian Missionary School, Shanghai, at Embroidery Work.

Copyright, Underwood & Underwood, New York.

the soil. For the benefit of the girls a solidly practical course in household economics has been provided at the central schools. Much of the remarkable progress in spreading knowledge of rural economics among the farming communities is due to the heroic efforts of Prof. James W. Robertson, the distinguished commissioner of agriculture and dairying for Canada, who has shown an astonishingly keen comprehension of the means required to meet the practical needs of an agricultural population. Sir William Macdonald gave to these reform endeavors his hearty support and placed a large fund at the disposal of the education authorities to establish the work in every county of the Dominion.

The American Ideal.

The improvement of rural education is nowhere in the United States carried on under as comprehensive and thoroly organized a plan as in Canada. And yet the promise of future good appears greater with us, because altho the trend of the movement in the States is predominantly an economic one, it is not wholly so, as in Canada it certainly is at present. As time goes on, the deeper sociological ideas will be more prominently in control. The aim is to make the rural school centers the chief agencies for enriching the moral, intellectual, and social life of all who can be brought under their influence. The consistent adherence to the ideal of developing each common school into the chief social institution and culture center of the school population, children and

adults having joint ownership in it—this ideal stamps every public educational effort with a distinctive character, giving it a deeper philosophical meaning and a closer approach to the foundations of everlasting truth.

Acknowledgments.

To the educational friends who have done so much to render this the Thirty-third Annual Summer number of *THE SCHOOL JOURNAL* helpful, interesting, and beautiful, sincere thanks are extended. Material has been placed at the disposal of the editors at large expenditure of labor and time—material relating to school gardening, agricultural instruction, and rural education such as has never before been gathered together within the covers of a single publication. Illustrations which money could not purchase have been loaned with a willingness that testifies abundantly to a desire on the part of educational people to do what they can to help on the cause to which this periodical is dedicated. It is, indeed, a privilege to be permitted to acknowledge with grateful heart the particularly generous support accorded this year.

The advertising columns of *THE SCHOOL JOURNAL* have become a veritable directory of the most important educational publishers and school supply houses of the country. The greatest possible care is taken to admit to these columns the announcements and advertisements of such firms only as are thoroly trustworthy, and readers can depend upon the reliability of any offers or



Physical Exercises of Chinese Children in a Shanghai School.

Copyright, Underwood & Underwood, New York.

inducements made by advertisers in *THE JOURNAL*. The readiness with which these advertisers have come forward to lend their aid in producing this beautiful souvenir number is significant. For one thing it shows the confidence placed in the value of these columns as a



Private Office of D. C. Heath, President of D. C. Heath & Co., 110 Boylston Street, Boston, Mass.

medium for reaching the teachers, boards of education, and others connected with the schools of the land. Thanks to the liberal attitude of the advertisers, the publishers have been enabled to produce a more costly number than any educational periodical has ever been privileged to issue.

Affiliated with The School Journal.

In *Educational Foundations*, teachers and students find a magazine wholly devoted to the serious study of education. Of other subjects only such are introduced as will aid the student to become more amply prepared for a comprehensive survey of the foundation problems. The purpose is to supply the best obtainable means for intensive and extensive study of the fundamentals involved in the work of school teaching. The reader is believed to be a person of intelligence, desirous of obtaining a firm grasp on pedagogy and its related sciences. There is no other periodical consistently and systematically laboring for these ends.

The new volume of *Educational Foundations* will be increased in size and will be greatly improved in typographical appearance. The several departments will supply distinct courses of self-culture for educators of children. Of these, several are especially suited for study in reading circles, educational classes and associations, as well as for individual work. Among them the course in "Child Study and Child Training," and the one in "The Methodology of Education" are particularly worthy of note. The subscription price of the magazine is \$1.50 per year, special rates being made for classes and clubs.



This is the silver anniversary year of *The Teachers' Institute*. For a quarter of a century the magazine has sent its message during ten months of each year, to the teachers of rural schools, and the various grades of town and city educational systems. Thousands upon thousands of teachers have been reading its pages in these years, and letters received from all parts of the English-speaking world tell of inspiration and help and encouragement received. In honor of the Silver Anniversary every effort will be made by editors and publishers to have the volume beginning with September the most precious one

of them all. Stories, articles, and illustrations, chart supplements—every page of every number will be planned with this thought in mind.

The magazine owes its large list of subscribers chiefly to the fact that it has always been enthusiastically recommended by its readers. In speaking of the new volume the editor would call attention especially to the course to be given in agricultural nature study, together with plans and suggestions for school gardens. Parents' meetings and all that serves to bring the residents of rural districts closer together will be made an important feature. The three R's, the every-day problems of discipline and school management, and the thousand and one topics that come up for consideration in school life will be discussed. A beautiful chart supplement will be given free with each number. The cost of *The Teachers' Institute* is \$1.00 a year.



The Primary School is a monthly magazine for the primary teacher. For twelve years it has been growing in usefulness and attractiveness. The purpose of the editor is to furnish primary teachers with whatever will be of most service to them in their practical every-day work, and will stimulate them to progressive self-improvement. Suggestions and lesson plans for all the studies of the primary grades are provided each month, including hand work and music. Among the many new and helpful features of the coming year will be portions of a teacher's plan book, covering all the work this teacher did in her own room. There will also be full directions for school entertainments, programs and exercises for special days; an operetta suitable for schools; a series of "chalk talks" on nature subjects, geography, etc.; stories of ten boys and girls of other days. School gardens and school decorations will be described, and the special problems which the primary teacher must solve will be discussed. Drawings suitable for the blackboard will be given each month, and a supplementary



Boston office of the Lothrop Publishing Company.



Rural School District, Lincoln County, Nebraska.
The building is now replaced by a neat frame school-house.

chart will be given with every number. Among the subjects of the charts for 1903-4 are the following: Cod Fishing; The Making of Cloth—from the Sheep to the Loom; Homes of American Indians; A Beautiful Christmas Picture; Blackboard Stencil.

The Child World is a magazine for the youngest readers and is sent out as a supplement with *Primary School*.

Our Times.

[A note describing the scope of *OUR TIMES*, the ideal journal of current events, will be found on page 786.]

The Kellogg Bureau.

Thru the summer and fall months vacancies in important departments of school work are constantly occurring and the work of promptly and successfully filling these

positions is often a burden or worry to principals and superintendents. Kellogg's Teachers' Bureau was started fourteen years ago because of the important demands for capable teachers made upon our editors. This year thirty colleges besides normal and technical schools have recommended their best graduates most of whom have satisfactory experience.

Fourteen years of experience, a model list of teachers; a record of having filled many hundred positions carefully and successfully make Kellogg's Bureau a reliable aid in an emergency. The manager, Mr. H. S. Kellogg, will direct the work this summer, as usual, at No. 61 East 9th street, New York. Telegram and telephone messages will receive prompt attention. 'Phone 3974 R 18th street.



McKinley School, Lincoln, Nebraska. Courtesy of State Supt. William K. Fowler, of Nebraska.



Where Little Holland

Agricultural Education in the Netherlands.

A complete system of agricultural instruction has been organized in the Netherlands, under a single department of state. This has proved decidedly successful because the plan of instruction is arranged uniformly for all districts. Yet it was only after repeated efforts in many directions that the Dutch system became consolidated. Nearly a century ago an attempt was made to provide higher agricultural education by the appointment of special professors of agriculture at the universities of Leyden, Utrecht, and Groningen. This attempt to introduce the subject served only to pave the way for the admirable system employed to-day.

Following the agricultural crisis in the early eighties, a royal commission was appointed in 1886 to inquire into and report upon the causes of depression. In consequence of its representations, a special department of the Ministry of the Interior was created to which the administration of agricultural affairs is still entrusted. Each of the eleven provinces has its state professor of agriculture, whose functions are to inspect and administer the experiment and demonstration stations, give lectures, provide courses of instruction for primary school teachers who wish to obtain a certificate entitling them to teach elementary agriculture, inspect the winter classes in agriculture in receipt of a state subsidy, and, in those provinces where winter schools of agriculture are in operation, to act as their directors.

Five of the provinces have state professors of horticulture. Six winter schools of agriculture have been established, as well as winter schools of horticulture. About one hundred and twenty classes in agriculture and

about twelve in horticulture are annually maintained by the state.

The State College.

The state agricultural college at Wageningen, founded in 1876 and considerably enlarged in 1897, is at the head of the educational system. It is a model in its workmanlike methods and the excellence of its equipment. The establishment comprises four distinct schools.

(a) A secondary school providing a course of general education for pupils up to the age of seventeen, with special attention given to chemistry, physics, and modern languages. This course prepares for the higher school.

(b) A lower agricultural school for the sons of small proprietors and tenant farmers. Pupils are admitted at the ages of thirteen to fifteen, after passing an examination in the subjects taught in the primary school. The course covers three years' work. The first year is a continuation of primary education, and serves as a preparation for either the agricultural or horticultural schools. During the second and third years the instruction is mainly theoretical. For pupils intending to emigrate to the Dutch West Indies there is an extra year in colonial agriculture.

(c) A lower horticultural school, with a two-years' course for gardeners, market gardeners, florists, and nurserymen. Together with this is a higher horticultural school, also having a two-years' course for those who desire more advanced and scientific training. Thruout this section the instruction is especially practical. There is a large garden of about twelve acres, excellently planned and well supplied with glasshouses, an arboretum, and a botanic garden.

(d) A higher school of agriculture and forestry, with a two-years' course in Dutch, and one of four years in



The Manual Training Room of the new high school at Rock Island, Illinois. H. B. Hayden, Superintendent of Schools.
[A description of the magnificent Rock Island school building will be printed next week.]

Is Leading the Way.

colonial agriculture. For purposes of demonstration and experiment a small farm of twenty-five acres is cultivated, where some of the best breeds of farm stock may be seen and the most modern agricultural implements are used. In addition to spacious laboratories there is an interesting museum of agricultural implements, together with machines, seeds, vegetable products, etc.

The Winter Schools.

A feature of the system is the winter schools established in those agricultural or horticultural districts where they are likely to prove of the greatest service. The commune has to provide suitable buildings, and the state defrays the rest of the expenses. Pupils are admitted at the age of sixteen, but must show a capacity to benefit by the instruction. The full course is for two years, and the classes are held during the winter months for three or four hours in the afternoon, five days a week.

The equipment of each school leaves nothing to be desired. In agriculture the instruction is wholly theoretical, but there is always a small demonstration plot, and during the summer the pupils have excursions to well-managed farms and other places of agricultural interest. The curriculum comprises chemistry, physics, botany, zoology, the breeding and care of animals, the properties of the soil, tillage, manuring, the cultivation of crops, dairying, rural economy, arithmetic, and farm accounts. In addition to the subjects which bear directly upon the art of gardening, instruction is given in commercial correspondence in French, German and English—a matter of great importance, having regard as it does to the great export trade in bulbs, flowers, fruits, and vegetables.

Agriculture in Common Schools.

Nature study in its widest applications is taught not only in rural but in urban schools. From their earliest years, the children are familiarized with the simple facts of nature, and encouraged to take an intelligent interest in them. By object lessons on plant life, by frequent country walks, by collecting plants and insects, and by cultivating a few flowers or vegetables in small gardens, the powers of observation are developed, and that spirit of inquiry is aroused without which success in any walk of life is unattainable. Indirectly this work lays a foundation upon which the scientific knowledge of farming must be based.

At each of the six state normal colleges all the students receive theoretical and practical instruction in horticulture and in natural and physical science. There has never been any idea that the training of the rural teacher should be differentiated from that of the urban teacher. Courses in agriculture are also provided by the state for those teachers who wish to obtain a certificate which will entitle them to teach agricultural subjects in the common schools, the establishment of which is now compulsory in every commune.

"Pro Juventute."

By GEES HENDRIKA NANTA, Leewarden, Holland.

In the Netherlands, as in other countries, the alarming amount of criminality among children and minors has aroused the interest of many thoughtful people. Some time since, a plan was inaugurated for solving the difficult problem by more practical means than those employed by the government, which consisted simply of prisons and houses of correction.

The movement resulted in the founding of a society called "Pro Juventute." It was started by Prof. G. A. van Hamel, of Amsterdam. The parent society still exists there, and from it other "Pro Juventute" societies have been formed in neighboring towns and cities, all of

them belonging to the federation, but each one independent in its methods.

The following account of the work already accomplished is taken from the last annual report of the "Pro Juventute" at Rotterdam, the youngest, but one of the most active branches.

It is the object of the society to fight against and to prevent crime among young people. It tries to attain this end by examining carefully all cases that come before the criminal courts, in which boys or girls are involved, and by taking care of minors whose actions are of such a character as have led or would be likely to lead to judicial trial or prosecution.

The society is divided into three sections. The first section, which has charge of "general affairs," consists of the regular contributing members. It arranges meetings for the discussion of questions of policy and practical matters relating to the plans to be carried out by the society. The second, known as the "judicial assistance" section, consists of a fixed number of lawyers, who give advice and assistance to young people compelled to appear before a judge. They coöperate as much as possible with the third or "patronage" section.

The third section is made up of women and men who serve as voluntary co-guardians of waifs and youthful criminals. They give them both financial and moral support, and after taking counsel with parents or a court of justice, withdraw them, if need be, from their unfortunate surroundings. The children, still under the care of members of this section, are placed in respectable families or in private educational institutions.

The coöperation of the courts of justice is of course indispensable for a society of this kind, and presumably this is to be found in a very satisfactory degree in all the towns where "Pro Juventute" operates. It has become the regular custom to have cases concerning young criminals defended by lawyers who are members of the second section of the society.

The method of procedure is as follows: When a punishable deed has been committed by a minor and the offender is brought to court, the public prosecutor reports the fact to the second section, and at the same time sends for inspection all official data concerning the case. The board of the section summarizes the case and sends this abstract to the third section. Here a patron or patroness is chosen to examine the case in person. He or she visits the accused, makes the acquaintance of the parents and others having an influence over him, and, in short, tries to find out not only the cause of the action in question, but the best means of preventing its repetition.

The patron writes down his conclusions after taking further counsel with the section, and if possible with the second section also. This advice is sent to the court by the second section. Usually the advice so given is followed by the court, and numerous are the cases in which the delinquent—after or without previous defence by a member of the second section—is acquitted, on condition that "Pro Juventute" will in the future take care of him.

If the accused is committed to jail or sent to a house of correction, the society is unable to do anything more and must leave the boy or girl to the care of the society for moral correction of prisoners. In case the delinquent is acquitted, the same patron does as much as possible for him by acting, with the consent of the parents, as co-guardian; in other words, he helps the youth in every possible way, procuring a situation for him if possible.

If the surroundings appear to be such as to preclude hope of any lasting improvement, the child is sent to the country, the expense being largely taken by the society, altho a contribution must be made by the parents, the amount of which is fixed by "Pro Juventute." The child is taken care of by some cottager or farmer, on payment

of a small stipend for his board, and so passes several years in a village or a small town at some distance from the city. In all the places to which children are sent the society has corresponding members who send regular reports to the patrons or patronesses. The latter try also to visit their pupils from time to time.

The society has found it difficult, now and then, to overcome the opposition of degenerate parents who have refused to part with their children. A great drawback to the best possible work results from lack of sufficient funds. This is one of the reasons why the society always insists upon a contribution from parents; tho it is far from being the only one. The main object in asking for the contribution is to keep alive the parents' feeling of responsibility, and to prevent their considering "Pro Juventute" as an institution existing only to relieve them of the care of their troublesome children and no less troublesome parental duties.

It is expected that these difficulties will be wholly or in large part removed by the Children's Act soon to be passed. This will not only allow of considerable financial assistance from the government, but will serve as a great moral aid. The law will fix *inter alia* the limits of parental authority, and so will enable the society to act more vigorously against obstreperous parents.

This two-fold support is urgently needed. The labors of "Pro Juventute" are constantly increasing, because, as it is the object of the society to work preventively so far as possible, it takes care of waifs and children who, if neglected, would be likely to get into bad ways. Reports from policemen, teachers, parents, or others taking an interest, of children who would be benefited by the guardianship of the society, are always welcomed.

Even a slight acquaintance with the work makes evident the fact that the essential part lies in withdrawing children from pernicious surroundings and enabling them to enter upon a new life. It is really wonderful the way the children thrive under the combined influence of fresh air, good food, wholesome work, and last, but not least, love.

The patrons take care that their protégés enter families where they will be welcomed and treated as children of the house. The yearly reports show marked success in this respect on the part of the patrons. As a rule the children become so much attached to "uncle," "aunt,"

or "cousins" that they answer "No," almost anxiously, when asked if they would like to go back to Rotterdam.

The change for the better is evident both from the children's outward appearance and their conduct. The patron who took his ward to the country a thin, pale little fellow can in a few short months report improvement in the child's physical and moral condition. After a year one would hardly recognize in the healthy, sturdy boy who evidently deserves the praise bestowed by his foster-parents, the sickly, half-timid, half-impudent street-arab with a tendency to steal anything he could lay his hands upon. "Well, sir, John behaves very well indeed," says the foster-mother. "At first he often didn't, but now we have no reason to complain. He has his faults, of course, but he is no worse than our own children."

And it is pleasant to see how John colors with joy at the words, and how his eyes sparkle, for his kind patron can see that he has tried to do his best.

There are, naturally, some cases with which all the efforts of the patrons meet with failure. Where is the philanthropic society that has not had many sad disappointments? But the members of "Pro Juventute" are far from being discouraged, for the failures are very few compared with the successes. They go constantly forward with the firm conviction—a conviction founded on experience—that there is a might stronger than sin, and its name is Love!



Here is an answer to many letters: We do not want, as a general thing, articles on "The Importance of Education," "The Value of Study," etc. Such are frequently sent us. We can use news of the right kind to almost any extent. We want news that portrays movements. For instance, we shall be glad to note the erection of a new building in an important town, with some account of the men who have carried the matter to completion; oftentimes a picture of the leading spirit, whether president of the school board or superintendent of schools—these are important and always welcome. We want every friend of education to bear THE JOURNAL in mind, and send us marked copies of local papers with news.



The School House at Escalante, Colorado.

Courtesy of Mrs. Helen Loring Grenfell, State Superintendent of Public Instruction, Colorado.

Educational Work of the United States Department of Agriculture.

By A. C. True, Director of United States Office of Experiment Stations.

The United States Department of Agriculture is required by law "to acquire and to diffuse among the people of the United States useful information on subjects connected with agriculture in the most general and comprehensive sense of that word." It was the intention of those who framed the act creating the department that it be primarily an educational institution, and such it is, in fact, to-day. Beginning, in 1839, with an appropriation of \$1,000,000 to the commissioner of patents for the distribution of seeds, the work of the government for the promotion of agriculture gradually evolved into a separate department, at first (from 1862 to 1899) under a commissioner of agriculture, but, since 1889, under the secretary of agriculture, an executive officer with a seat in the president's cabinet.

Prior to 1889 the growth of the department was comparatively slow, but since that time it has developed rapidly, until now its employees number more than 3,700, of whom more than 2,000 are engaged in scientific and technical work, and its expenditures amount to nearly six million dollars a year, not including printing or building funds. Its scientists are attacking a multitude of agricultural problems and solving many that have long puzzled

than six million of them belonged to the popular series known as Farmers' Bulletins, which are distributed without charge, either thru members of Congress or directly



from the department. These bulletins contain short accounts of practical results of investigations, or summaries of useful information collected from various sources, and many of them are suitable for use in the school-room.

One of the most important publications of the department is the Yearbook. This is a bound volume of some 800 pages and is liberally illustrated. It contains the annual report of the secretary of agriculture and a series of popular articles prepared by department officers, together with a large amount of statistical information on a considerable variety of subjects. The Yearbook is printed in editions of 500,000 copies at an annual cost of about \$300,000. Like the Farmers' Bulletins it is largely distributed thru members of Congress.

A set of the Farmers' Bulletins and Yearbooks would be useful in school libraries, and, undoubtedly, such libraries thruout the country could arrange with members of Congress to receive regularly these publications of the department.

Several serial publications are issued. These are the *Monthly Weather Review* of the Weather Bureau, the *Crop Reporter* of the Bureau of Statistics, and the *Experiment Station Record* of the Office of Experiment Stations. The latter publication contains ab-

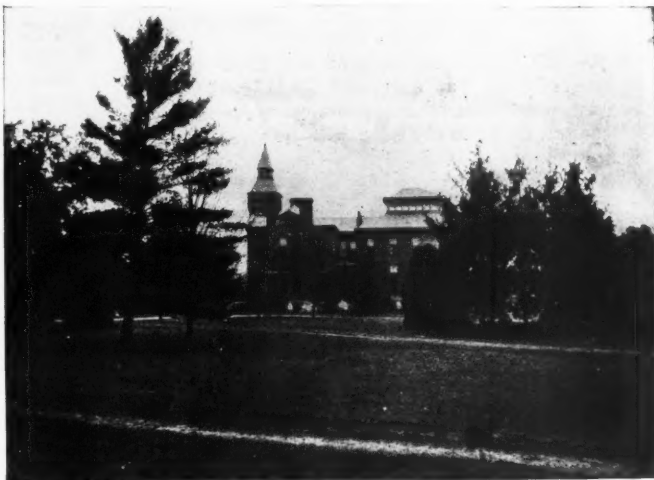


Wells Hall.

zled the foremost scientists of the world; its explorers penetrate to the uttermost parts of the earth and to the most remote islands of the sea to discover and bring home to the American farmer new and valuable economic plants; and its staff of expert lecturers, writers, and editors are carrying the results of these researches to the people.

Department Publications.

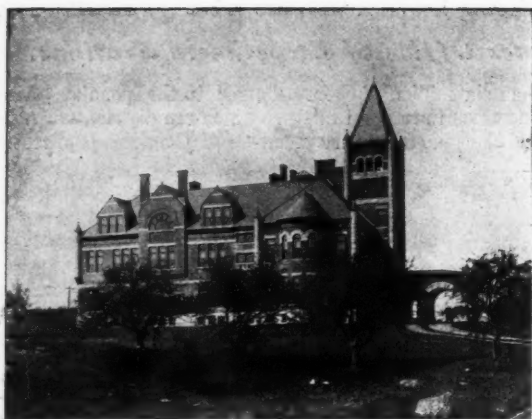
This, in the main, is the educational work of the department: To render available to the people of the country the scientific investigations in this and other countries on problems relating to agriculture. Much of this work is accomplished by publications and correspondence. The publications of the department cover a wide range of subjects and vary from the most simple and practical popular bulletin to the strictly scientific treatise; from the Farmers' Bulletin, of fifteen or twenty pages, to the Yearbook, of more than 800 pages. During the year ending June 30, 1902, the department issued 757 publications, about half of which were reprints. More than ten and one-half million copies of these publications were printed, and more



Library and Museum.

Michigan State Agricultural College.—J. L. Snyder, President.

This institution is doing excellent, practical work in the training of agricultural students. The three illustrations on this page give only a glimpse of the provisions made for it by the wisdom of the state.



Thompson Hall.

tracts of all the publications of the department, the state experiment stations, and reports of scientific investigations in agriculture thruout the world. It thus constitutes a quite complete review of the progress of agricultural



Nesmith Hall.

science. The possessor of a file of this journal, with its detailed subject and author index, has at his command the means of obtaining information on a wide range of subjects pertaining to the science and practice of agriculture.

The technical and scientific publications of the depart-



New Hampshire Agricultural College—General View of the Grounds.

Durham, N. H., has been made famous by the college whose buildings and grounds are shown on this page. Many have centered their hopes for the regeneration of New England upon this institution. A new president is soon to be chosen, Governor Batchelder, to whom the presidency was tendered, was unable to accept. In the near future THE SCHOOL JOURNAL will publish an article describing the foundation and work of the Durham college.

ment are issued in limited editions and are sent mainly to libraries, educational and scientific institutions, and individuals working along special lines. Information regarding these and all other publications of the department can be had by applying for the monthly list of publications, which contains descriptions of all publications printed during the month of issue and the prices for which those not on the free list will be sold.

The correspondence of the department is very large and is constantly growing in extent and importance. It is the policy of the department to answer all letters of inquiry, and great pains is taken to give full and accurate information if possible.

The library of the department, comprising about 75,000 books and pamphlets, is probably one of the best working libraries on agriculture and allied subjects in the world. It is freely open to students, teachers, and investigators, and certain of its books are frequently loaned to officers of the state agricultural colleges and experiment stations when making special investigations.

Educational Movements.

The department is actively engaged in several educational movements for the improvement of rural conditions. Thru the Office of Public Road Inquiries, coöperating with a number of other agencies, the people of the country are being taught the advantages of good roads. This is accomplished by means of publications, illustrated lectures, and the construction of sample roads, according to improved methods.

All branches of the department are working for the advancement of education in this country, and especially is this true of the Office of Experiment Stations, which is the agency representing the department in its relations with the agricultural colleges and experiment stations. Its officers, thru frequent visits to these institutions, become familiar with the problems con-

fronting them and are thus enabled to offer many valuable suggestions. They also study the progress of agricultural education and research in foreign countries and acquaint our agricultural institutions with the results of such study. The office is aiding the various movements for the promotion of graduate study in agriculture, for the introduction of systematic courses of agriculture in secondary schools, for the teaching of the elementary facts and principles of agriculture thru nature-study courses and school gardens in the elementary schools, and for the improvement of rural schools thru the consolidation of the weak schools, the organization of rural high schools, and the employment of better qualified teachers.

The first graduate school of agriculture, held at the Ohio state university last July, was attended by seventy-five students from twenty-eight states and territories, fifty-four of whom were teachers and investigators in the agricultural colleges and experiment stations. The director of the Office of Experiment Stations was dean of the school, and the faculty consisted of thirty-five experts from the Department of Agriculture and the agricultural col-

leges and experiment stations. Plans are now in progress for making this a permanent institution.

Farmers' Institutes.

All these institutions—the primary and secondary schools, the colleges and post-graduate schools—are prin-



Rose Garden and Science Hall.

cipally agencies for the instruction of our youth. Instruction for the adult rural population is also provided for, largely thru the agency of farmers' institutes. These institutes are held in forty-three states and territories to the number of about 2,700 annually. In some localities they are well organized and efficiently conducted, but in others there are numerous problems of management to be solved. For the purpose of extending the aid of this department to the farmers' institute movement, the secretary of agriculture has recently been authorized by Congress to "investigate and report upon the organization and progress of farmers' institutes in the several states and territories and upon similar organizations in foreign countries, with special suggestions of plans and methods for making such organizations more effective for the dissemination of the results of the work of the Department of Agriculture and the agricultural experiment stations, and of improved methods of agricultural practice."

Charge of this work has been assigned to the Office of Experiment Stations, and an officer, called farmers' institute specialist, has been appointed to have immediate direction of this work. He is expected to advise with the managers of the institutes in the several states and aid them in any way he can to make the institutes more useful and effective. Arrangements will also be made to have the department represented at the more important institutes held in different regions.



The Experiment Orchard of the University of Tennessee, at Knoxville. The pictures on this page speak for themselves of the provision a leading Southern university made for efficient agricultural instruction

Scientific Aids and Student Assistants.

Largely thru the efforts of Secretary Wilson the department now affords opportunities for advanced study in agriculture to two classes of its employees. These are Scientific Aids and Student Assistants. Candidates for the position of scientific aid are required to file with the Civil Service Commission a certificate showing that they have received a bachelor's degree as the result of a regular college course, a statement covering their post-graduate studies or special qualifications for the work of the department, and a thesis or other literature of their own composition. The salary of scientific aids is sufficient for living expenses, usually about \$40 per month, and the term of appointment does not exceed two years. Scientific aids receive training in the scientific work of the department and frequently have exceptional opportunities for study and research in special lines. In this way many prepare themselves for examination for promotion to higher positions in the department. Fifty-eight persons have been appointed scientific aids and twenty-one of these have been promoted to the regular classified service of the department thru civil service examinations.

Student assistants are not necessarily college graduates and are admitted without examination. They are selected with reference to their qualifications for the special work to be undertaken, and frequently spend only their college vacations in the service of the department. At the beginning of the present year eighty-two student assistants were employed by the department, principally in the Bureau of Forestry, Bureau of Plant Industry, and the Weather Bureau.

More than thirty officers of the department are engaged in teaching, outside of official hours, in fourteen of the prominent colleges and universities of the District of Columbia and different states. Lectures are also given to the public school teachers of the District of Columbia by officers of the Bureau of Plant Industry, Division of Biological Survey, and Office of Experiment Stations, and lectures by officers of the department before scientific and other learned societies, colleges, schools, and other organizations are of frequent occurrence. These officers have also contributed many articles to proceedings of societies, various periodical publications, and encyclopedias, dictionaries, and other standard books of reference, and not a few of them have published scientific books on subjects related to their special work in the department.

Briefly then, the United States Department of Agriculture is a great research institution, whose officers are earnestly seeking new truths—new economic plants, new remedies for diseases of plants and animals, new and better methods of doing things agricultural,—and are just as earnestly striving to bring about the practical application of their researches on the farms of our country. This is educational work of the highest type. It is constructive and progressive. In their research work these scientists are co-operating with the officers of sixty agricultural experiment stations; in the application of their investigations—the dissemination of information, they are calling to their aid every available institution—the colleges and schools, the farmers' institutes and farmers' societies, the lecture platform, and the press. Their influence extends to the public school pupil, the college student, and the adult farmer, and all are benefited.

Next week—Index to the volume of THE SCHOOL JOURNAL ending with this number.

What Can Be Done in the Cities.

A Home Gardening Association.

Some five years ago the people of the university settlement in Cleveland, Ohio, organized a home gardening club. It was the purpose of the settlement workers to get the people in the neighborhood to improve their homes by planting flowers and vines. The keynote to the work has been, "Whatever tends to develop the love of the beautiful is well worth doing." The part of the city where the work was started was particularly barren and unattractive, but the success has been marked.

In the spring of 1900 the association decided to use the public schools as a means of awakening an interest in flower culture. The plan decided upon was as follows: Seeds were sold in packages at the price of one cent a package, the privilege of buying being extended to the pupils of the primary grades only. Some idea of the result can be drawn from the fact that 48,868 packages, amounting to 206 pounds of seed, were disposed of in this way.

The time was auspicious for the introduction of gardening, since it correlated with the language lessons, which, at this season, were largely upon trees and plants. Talks were given on the grouping and arrangement of gardens, the preparation of soil, the time of planting, the placing of seed, and the care which should be given to the growing plant.

At the opening of the school year in September an exhibit of the flowers was held in many of the school buildings. Some of the children brought large bouquets; others a few flowers. All the school children were given an opportunity to view the exhibit.

The second year the privilege of buying was extended to the pupils of the grammar and primary grades. Some 121,673 packages were sold. The flowers did not thrive equally well in all parts of the city, but there was no locality in which some degree of success was not attained. Even in the crowded manufacturing districts, where

smoke, soot, and scarcity of room were hindrances to great success, some spot was made brighter by the blossoms. It was found that the nasturtium, zinnia, petunia, bachelor's-button, candytuft, four o'clock, morning-glory, and marigold yielded the best returns.

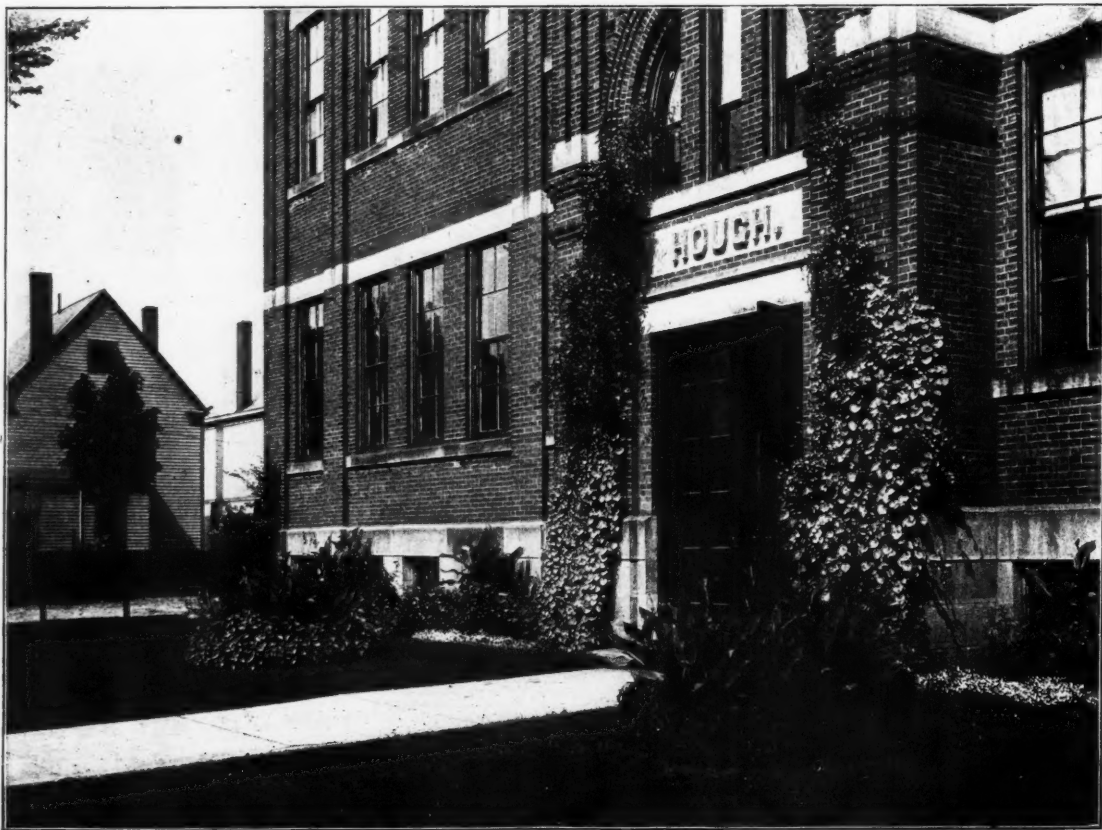
In the following spring, 3,000 potted bulbs of hyacinths, tulips, and narcissus were sent out by the association for the decoration of the public school-rooms. In the fall, about 7,000 unpotted bulbs were sent to the schools. The plan of potting these at the schools proved a good one, as the pupils, having already seen the work done, repeated the experiment at home.

This work was of manifold value. The pupils learned to appreciate the value of rain and sunshine; to watch and study for themselves the germination of the seed, the growth of the plant, its bud and its blossom; to know by name many flowers before unfamiliar to them; to note the peculiar features of each; to distinguish colors and know their shades and tints.

Work was also done in beautifying school-yards. The space about the building, where the experiment was tried, was sodded, and shrubs were planted.

Last year the number of seeds sold fell off slightly. Strange as it may seem, this decrease is considered encouraging rather than discouraging. It proves that the older children are no longer amateurs in the work. They are beginning to have such success with their gardens that they can not only save enough seeds for themselves for the following year, but can supply their friends.

A final work of this association has been in the direction of increasing the love of the beautiful in the community at large. It was decided to render a certain block a model for others to imitate. Window-boxes, seeds, and plants were given to each householder who would agree to care for them, and prizes were offered for the best gardens and window-boxes. The people became enthusiastic and a number of pretty gardens were the result, even tho grown in the midst of the smoke.



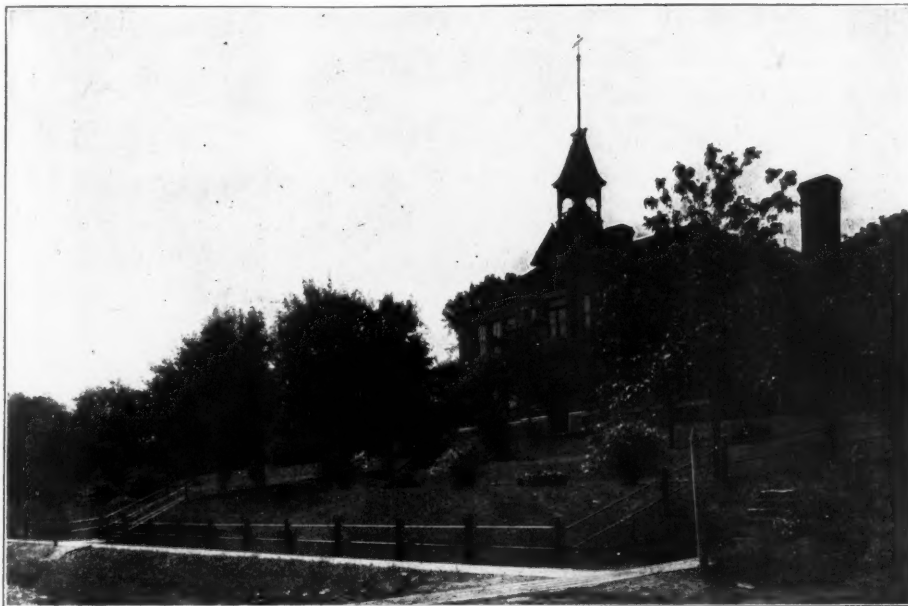
The Beautiful Yard of a Cleveland School.

Illustrated lectures were given in every district on flowers, flower culture, and gardens. The results of the work have been an increase of interest among the children, the cleaning up of yards, 25,000 beautiful gardens in as many yards, and the decoration of the school buildings and grounds.



Utilization of Vacant Lots in Philadelphia and Elsewhere.

The utilization of city lots for purposes of gardening has been a matter under discussion for several years. Philadelphia has set the example for the country by showing practically what can be done along this line.



Public School Grounds of Florence, Nebraska.

The Vacant Lots association of that city was founded in 1897. It is made up of well-to-do people, who have made a successful effort to represent the city in a practical charity. The accompanying table will show something of what has been accomplished by the association, in the seven years since its establishment.

COMPARATIVE STATEMENT OF RESULTS
1897-1902

YEAR	NO. ACRES	NO. GARDENS	NO. PERSONS AFFECTED	TOTAL PRODUCT	AVERAGE PRODUCT PER GARDEN	TOTAL COST	COST PER GARDEN
1897	27	100	528	\$6,000.00	\$60.00	\$1,825.33	\$18.25
1898	40½	162	770	9,700.00	59.87	2,266.76	14.00
1899	73	292	1495	14,810.80	49.35	2,650.30	9.07
1900	130	520	2386	24,600.00	47.30	3,962.48	7.62
1901	158	632	2946	30,000.00	47.46	4,480.94	7.09
1902	198½	794	3775	50,000.00	62.80	5,556.80	7.00

These results, according to the report for 1902, have been obtained largely thru enlarging the work, tho a considerable portion is owing to the increased willingness of the gardeners to do all in their power to make the cost as light as possible and to promote the best interest of the association's undertaking. They have cheerfully provided themselves with tools and much of the seed and fertilizer needed, and in many ways have lightened the duties of the superintendent by assisting wherever it was in their power to do so.

As a means of providing immediate relief for those in

pressing need, a co-operative farm of twenty-three acres was last year cultivated by day labor. Any one applying for aid was offered work at \$1.25 per day of 10 hours. This wage he could have at the end of the day or week in cash. The crops were marketed by the gardeners for the association, thus giving further employment to those who needed immediate aid, the net proceeds being turned into the treasury.

In the first year's work it was a matter of surprise to find that fifty-seven per cent. of the gardeners were skilled laborers, but this percentage increased during the first three years until in 1899 sixty-two per cent. were of that class. This increase has gone on until now, 1902, sixty-eight per cent. of the gardeners are of that class. The percentage of old men, that is men

over fifty years, has gradually grown larger and larger, while that of men under forty years has gradually grown smaller and smaller as business conditions have improved. Most of these old men are skilled mechanics, but are shut out from regular employment on account of their age, want of good eyesight or hearing, because of enfeebled condition or some other insignificant disability.

There are now 325 subscribers to the association, in addition to the fifteen persons and firms who loan the association land.

Thus three hundred and forty persons

in all are engaged in helping 3,775 others, situated not so well, not only to get a better living, but to live a happier and nobler life. For each \$7.00 expended in 1902, each of 794 families has been benefited on the average to the extent of \$62.80.

The sum produced, \$135,000, to many may seem small when the large number of persons among whom it was divided, 14,600, is considered, continues the report, but the benefits that are bestowed rise far beyond any one's power to estimate when we remember that the products were the result of labor that would otherwise have been idle and that the land involved would otherwise have yielded nothing but weeds or unsightly rubbish heaps; and, when we further consider that in addition to these pecuniary benefits these 2,500 families have also had a summer's outing full of interest and wholesome study of nature, of plant life, of business that combines profit with pleasure, that little children, hundreds of them, have learned the names of many plants and vegetables in a way never to be forgotten, and for the first time in their little lives have seen with their own eyes and learned thru experience how these plants grow.

But this is not all that can and should be said of the work from this viewpoint. When we consider the rapid increase of population in our towns and cities, so largely in excess of the increase in country districts, and how this is continually aggravating the already over-crowded conditions of city life, we are brought to realize that some speedy, effective relief must be found. Good people everywhere are giving much thought to the problem and are practically unanimous in the opinion that this rush to the cities must in some way be checked; that the already over-crowded conditions must in many cases

be relieved, or retrogression and degeneration in our civilization must result.

The only remedy yet proposed with any considerable unanimity of opinion is "back to the land." Opinions as



Busy in the Cornfield.

to the best method of accomplishing this end are widely divergent, even antagonistic, but "back to the land is the only hope" seems to be the general cry. Coloniza-

one of the avenues by which the people may be led "back toward the land"? Are we not helping greatly and in a most practical way, this almost universal movement?

The poverty-stricken denizens of our city slums are usually born and reared inside the city limits. They know nothing of country life, and apparently are doomed to endure the miserable discomforts and privations of the slums with little or no opportunity to share in the varied attractions and pleasures which surround them, except those of the lowest and most degrading nature. They must be taught what country life is and how a living may be procured therein. They must know something of agriculture, market gardening, and home building. This long-felt want the vacant lot gardens are filling in a larger measure, we think, than perhaps any other single institution in the whole country. They are bringing country life, with all its blessings of pure air, wholesome food, and health-giving exercise, to the very doors of the slum dwellers. We are lengthening "country weeks" into "summer months," while turning waste places into beautiful and profitable gardens.



The Young Gardeners at their Labors.
(Their interest in the work is apparent.)

tion schemes are organized; agricultural schools and colleges are strenuously called for; educational institutions everywhere are adding nature studies and agricultural departments to the curriculum; school gardens are rapidly becoming prominent features in our public schools—all as a means of accomplishing this end. When the growth of vacant lot gardens in this and other cities is considered, is it too much to suggest that probably this farming in the city may be made at least

gardens, in elementary budding, grafting, planting, and gathering and storing fruit. When the weather does not permit out-of-door work a course of instruction is provided in hot-houses and green-houses, where the pupils learn potting and propagating, and in museums, where lectures are given on botany.

During the second year instruction is given in the preparation of soils, the choice and growth of shrubs and trees suitable for small or large gardens, the planting and growth of vegetables, rotation of crops, the selection of fruit trees, wall-fruit growing, storing and preparing fruit for market, advanced budding, grafting, and pruning. The indoor work includes lessons in horticultural building, hot-water heating, advanced propagation, methods of exterminating insect pests, and indoor growing of fruit and vegetables. The third year's course treats of the special classes of plants, cross-breeding, and hybridization, together with landscape gardening and elementary meteorology.

The London school board has provided a series of scholarships in this school, and has also started a series of botanic gardens of its own in the city's parks. About twenty kinds of plants are cultivated and assistants are provided to give information to students and teachers, and to supply specimens for study.



How the Gardens are Laid Out.

The three pictures on this page show what can be done by intelligent effort in developing voluntary interest in gardening. The boys connected with the plant manufacturing the National Cash Register, at Dayton, Ohio, have done splendid work in their gardens, to the advantage of pocket-books as well as hands, brains, and future usefulness.

Practical Gardening in London.

The Royal Botanic Society has an interesting gardening school at Regent's Park, London. The scheme of work combines thoro practical instruction in all the operations of gardening, with theoretical instruction in botany and the nature of soils. The course is arranged so as to extend over three years, altho pupils are at liberty to take a two years' course if they desire.

During the first year pupils are engaged in exercises upon the use of tools, and in practice in mowing, rolling, turf-cutting, digging, trenching, and potting; they are also instructed in the best methods of laying out flower gardens and kitchen

What the Lowthorpe School is Doing

By LOUISE KLEIN-MILLER, Lowthorpe, Groton, Mass.

School gardens are not generally incorporated as a part of the regular curriculum of school work, but their importance as a potent factor in the normal and rational education of children is being recognized. The day is not far distant when a director of school gardens will be as necessary in a corps of teachers as a supervisor of drawing, music, physical culture or domestic science. The movement is being pushed forward by those who



A successful young gardener of the Lowthorpe School with the spoils of his labor in the shape of beets and carrots.

are interested and believe in it, and it is carried on under many and various auspices.

The officers of the State Pomological Society of Maine, realizing that the children of the public schools will soon be the fruit growers of the state, held a Horticultural school May 14 and 15 at Winthrop, a rural town in Maine. The object was "to interest the young in the study and enjoyment of plants, flowers, and fruits, and teach the boys and girls, who will soon take the places of the fruit growers of to-day, some practical affairs of fruit and flower growing."

The different schools were visited by the instructors in the morning, and the general sessions were held in the town hall in the afternoon. Stereopticon lectures were given in the evening. Mr. Dick Crosby, of the Department of Agriculture, Washington, D. C., addressed the students of the high school on "Agricultural Education." Mrs. V. P. DeCoster visited a country school and made suggestions about the improvement of the school grounds. It was my privilege to have a conference with all the teachers and submit a plan for improving the high school grounds. Thursday, Prof. W. M. Munson, of the Maine Agricultural college, gave a talk on "The Care of Plants, Grafting and Budding," which I followed by one on "Insects,—Friends and Foes," illustrating life histories by specimens. The school garden movement in the United States was illustrated by

a stereopticon lecture in the evening by Mr. Crosby. "The Possibilities and Value of Small Fruit Culture" was presented by Mrs. DeCoster, Friday afternoon. I urged the importance of using the beautiful native shrubs, which can be secured without money and without price from pastures, swamps, roadsides and woods, and showed combinations of color and texture of flowers and leaves which produce good results in landscape gardening. A lesson in propagation by cuttings was given, using a geranium plant for the illustration. Seeds, bulbs, perennials and shrubs were distributed to the children. Friday evening a stereopticon lecture on "Village Improvement Including Boys' Gardens and Improvement of School Grounds" showed the educative value of the work done in Groton.

The teachers, children, and parents were greatly interested, and a village improvement association is about to be formed. The principal of the high school said to me on leaving, "No one can estimate the value and influence of the work that has been done here."

The children's work in Groton is under the auspices of the Village Improvement Society. Two lines of work were taken up last year—the boys' garden and improvement of school grounds. Ten gardens were started, each 10×90 feet, and this year we have forty-five, each 10×60 feet. Last year the garden was possible thru the interest and generosity of friends. This year an appropriation of sixty dollars was made by the society. The boys worked well and were very successful. Some of them raised all the vegetables used by their families and had some to sell.

The products of the gardens were not the important feature. Strong emphasis was laid on the educative side of the work. Lessons given included talks on soils and fertilizers, the interesting story of the bacteria on the clover, destructive and beneficial insects, influence of birds in keeping insects in check, life histories of plants, the marvelous color and structure of flowers to secure cross pollination, the wonderful story of fertilization and reproduction—lessons that will influence the children all their lives. The practical side of the work—digging, hoeing, weeding, caring for tools—were lessons in thrift and economy.

To present another phase of the work the children were invited to come to the gardens at Lowthorpe and learn propagation by means of cuttings made from geraniums, heliotropes, and other plants which root easily. These plants have been cared for during the winter and are ready to be put out into the gardens this spring. The students at Lowthorpe made hundreds of chrysanthemum cuttings during the autumn. In March



Gardens of Lowthorpe School.—Mrs. Louise Klein-Miller, Principal.

an announcement was made that any child who wanted a chrysanthemum plant should come to the Boys' Club room at a certain hour and bring a pot or can. Nearly three hundred plants were distributed, with directions for repotting, feeding, tending, disbudding, etc. These plants are being cultivated with the greatest interest, pleasure, and solicitude in anticipation of the chrysanthemum show which will be held in November.

After the garden work closed in the autumn, a Boys' Club and a Girls' Club were organized, in which the children took up some work in arts and crafts. The boys had a course in "First Aid to the Injured" and courses in basketry, kite-making and hammock-making. The girls took up reed and raffia basketry. At the May party, the proceeds from which are to be devoted to the work of the Village Improvement society, there was an exhibition and sale of the children's work.

The improvement of the school grounds was another feature of the work. The attractive appearance of the high school grounds was due to the energy of the children under efficient leadership. The most successful effort was made in a country school. The teacher had taught the same school for twenty-two years and nothing had been done. There were only two trees in the yard and they poor ones. The way the teacher and the children took hold of this work was very gratifying. Within two weeks they had transplanted nineteen trees, gathered up all the stones, made a rock garden and a fern garden, transplanted vines from the woods and really transformed the place. They took the prize offered by the society for the best work—a subscription to the beautiful magazine *Country Life in America*. Each child was privileged to take a number of the magazine home once a month. They have been studying the plans of good gardens all winter and have a more educated taste. The teacher said, "We worked in a haphazard way last year but now we have a definite plan." A trip to the woods resulted in the transplanting of twenty-two evergreen trees, which are being used to make a hedge. The seeds of annuals were started in boxes in the school early in March ready for spring planting. The perennials planted last year are all up and in good condition. Each child has a vegetable garden at home and will also contribute to the chrysanthemum show in the autumn. It is a busy place. The teacher and the children are so interested in the work it is a real pleasure to help them.



The College Course in Agriculture.

The movement for the specialization of the different branches of the science of agriculture and the development of a highly organized faculty in our agricultural colleges has gone furthest in the College of Agriculture of the University of Illinois, of which Prof. Eugene Davenport is dean. The aims and scope of the instruction given in this college are set forth in the university catalog for 1901-2, from which the following statements are taken:

Aims and Scope.

The College of Agriculture offers students an education designed to fit them for the business of farming and at the same time to furnish a means of culture. This education is, therefore, partly technical and partly cultural. Its end is the training of students to be not only successful farmers, but good citizens and successful men as well. In other words, it seeks to provide an education suitable to the needs of rural people.

Of the courses leading to graduation in the College of Agriculture, the technical portion constitutes about one-half of the entire work of the student. Of the remaining portion of the course, thirty-five hours are prescribed in the sciences nearest related to agriculture. Since the technical subjects are also of a scientific character, the course as a whole is essentially scientific, rather than literary; yet the college is mindful of the educational importance of history, literature, language, and the political sciences, and reasonable attention is

therefore given to these subjects and their pursuit is encouraged by a liberal amount of open electives.

The college also offers, thru the department of household science, a variety of courses especially treating of the affairs of the home.

Instruction is by laboratory work, supplemented by text-books, lectures, and reference readings, which are almost constantly assigned from standard volumes and periodicals. The student is brought into close practical contact with his subject. He takes levels, lays tile, tests the draft of tools, traces root systems of corn and other crops, tests germination of seeds, determines the fertility in soils and the effects of different crops and of different rotations upon soil fertility. He does budding, grafting, trimming, and spraying, and works out problems in landscape gardening. He tests milk, operates separators, makes and judges butter and cheese. He studies cuts of meat and samples of wool, judges a great variety of animals, and has practice in diagnosing and treating their diseases.

Equipment.

The college keeps on deposit from the largest manufacturers several thousand dollars' worth of plows, cultivators, planters, cutters, shellers, grinders, mowers, binders, engines, etc. It has extensive collections of agricultural plants and seeds and their products. Laboratories are well equipped with apparatus and appliances for the study of manures, fertilizers, fertility of soils, soil physics, soil bacteriology, germination of seeds, corn judging, etc. The grounds of the university and the fields and orchards of the experiment station are always available for illustration in class work. An illustrative series of colored casts of fruit and enlarged models of fruits and flowers, collections of seeds and woods, cabinets of beneficial and noxious insects with specimens of their work, photographs, maps, charts, drawings, and lantern slides all afford valuable material for study and illustration.

Specimens of Morgan horses; Shorthorn, Jersey, Ayrshire, and Holstein-Friesian cattle; Shropshire, Merino, and Dorset sheep, and Berkshire swine afford material for judging. This material, moreover, is largely increased by loans from prominent herds. In the dairy department is a complete outfit for a milk-testing laboratory and for cream separation and butter and cheese making. The department of veterinary science owns a collection illustrating materia medica, a collection of pathological specimens illustrating special abnormal bony development, and papier-maché model of a horse, capable of dissection, and showing every important detail of structure. In addition are levels, lanterns, microscopes, and cameras, an extensive list of agricultural journals, a complete file of experiment station bulletins from all the states, and an excellent assortment of standard reference books, including nearly all the pedigree registers published.

Agricultural Course.

This course is designed to fit young men for the business and relations of country life. Students may graduate upon completing the studies of the prescribed list (and a specified number of electives).

Classification of Subjects.

Prescribed.	Elective (Special.)
Agronomy.	Agronomy.
Animal husbandry.	Animal husbandry.
Botany.	Botany.
Chemistry.	Dairy Husbandry.
Dairy husbandry.	Horticulture.
Economics.	English.
Geology.	Rhetoric.
Horticulture.	Zoology.
Military.	Veterinary science.
Physical training.	
Rhetoric.	
Thremmatology.	
Zoology.	

A list of the different courses offered in the agricul-



The Unique Playground of the Norrie School.

tural subjects, with an outline of the topics included in each course, follows.

AGRONOMY.

Drainage and Irrigation.—Location of drains and irrigation conduits, leveling, digging, laying tile and pipes, filling, and subsequent care; cost of construction and efficiency; sewers for the disposal of waste water from farm buildings and the sewage from kitchen and toilet; farm water pipes, pipe and thread cutting.

Field Machinery.—The tools and machinery of the field setting up and testing machines, noting construction and elements necessary for successful work.

Farm Power Machinery.—Horsepowers, gas engines, traction engines, windmills, pumps, corn shellers, feed cutters, grinders, and thrashing machines—their construction, efficiency, durability, and care.

Farm Buildings, Fences, and Roads.—The arrangement, design, construction, and cost of farm buildings, especially of barns, granaries, and silos; the different kinds of fences, their cost, construction, efficiency, and durability; cost and construction of roads and walks.

Farm Crops.—Quality and improvement. Judging of corn and oats, wheat grading, methods of improving quality, shrinkage of grain, care of stored crops to prevent injury and loss.

Farm Crops.—Germination and growth. Vitality and germination of seeds, preservation of seeds, methods of seeding; conditions of plant growth; peculiarities of the different agricultural plants in respect to structure, habits, and requirements for successful growth; enemies to plant growth—weeds and weed seeds, their identification and methods of destruction, fungus diseases, such as smut of oats and wheat, and blight, scab, and rot of potatoes, methods of prevention; insects injurious.

Special Crops.—A special study of farm crops taken up under an agricultural outline—grain crops, root crops, forage crops, sugar and fiber crops—their history and distribution over the earth, methods of culture, cost of production, consumption of products, and residues or by products.

Field Experiments.—Special work by the students, conducted in the field. Special opportunities will be given to advanced students of high-class standing to take up experiments, under assignment and direction of the instructor in farm crops, on certain large farms in the state, arrangements having been made with the farm owners or managers for such experiments.

Soil Physics and Management.—This course is designed to prepare the student better to

understand the effects of the different methods of treatment of soils, and the influence of these methods upon moisture, texture, aeration, fertility, and production. It comprises a study of the origin of soils, of the various methods of soil formation, of their mechanical composition and classification; of soil moisture and means for conserving it; of soil texture as affecting capillarity, osmosis, diffusion, and as affected by plowing, harrowing, cultivating, rolling, and cropping; of the wasting of soils by washing; fall or spring plowing and drainage as affecting moisture, temperatures, and root development.

Soil Bacteriology.—A study of the morphology and activities of the bacteria which are connected with the elaboration of plant food in the soil or which induce changes of vital importance to agriculture, with regard to the effects of cropping and tillage upon these organisms, and with special reference to the study of those forms which are concerned with the formation of nitrates and nitrites in the soil, and with the accumulation of nitrogen by leguminous crops.

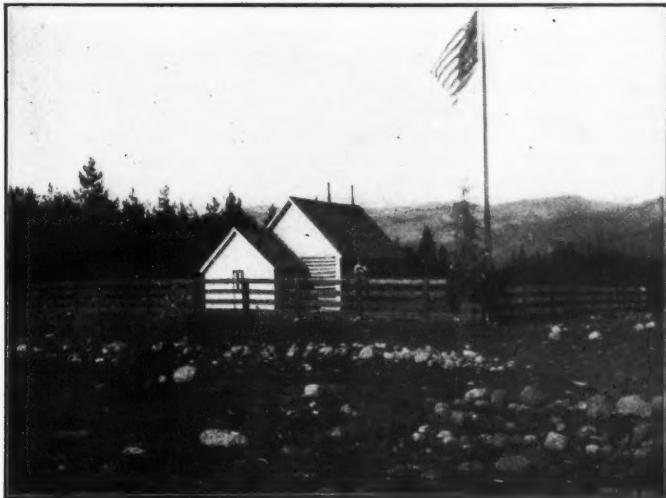
Fertilizers, Rotation, and Fertility.—The influence of fertility, natural or supplied, upon the yield of various crops; the effect of different crops upon the soil and upon succeeding crops; different rotations and the ultimate effect of different systems of farming upon the fertility and productive capacity of soils.

History of Agriculture.—The history and development of agricultural practice and progress, with special reference to the methods employed in ancient times and the effect upon agriculture of the introduction of rational crop rotations, the intelligent use of fertilizers, the introduction of machinery, and the systematic breeding of animals and plants.

Comparative Agriculture.—Reasons for the differences in the agriculture of different times, peoples, and countries, and why it is that the agriculture of a region or of a farm is a definite and individual problem, together with the need of harmonizing agricultural practice with natural conditions as well as with the findings of science; circumstances that influence agricultural practice, as soil, climate, machinery, race, custom, land tenure, etc., and what is best under different conditions.

HORTICULTURE.

Principles of Fruit Growing.—This course embraces a study of location with reference to climate and markets, planting, soil treatment, pruning, protection from insects and diseases, harvesting, and marketing.



The Public School at Norrie, Colorado.

Courtesy of Mrs. Helen Loring Genell State Superintendent of Public Instruction.

Small-Fruit Culture.—A study of the strawberry, raspberry, blackberry, dewberry, currant, gooseberry, cranberry, and junberry; each studied with reference to history, importance, and extent of cultivation, soil, location, fertilizers, propagation, planting, tillage, pruning, insect enemies, diseases, varieties, harvesting, marketing, profits.

Vegetable Gardening.—Kitchen and market gardening, including a study of all the common vegetables.

Plant Houses.—The construction and management of plant houses, with especial reference to the growing of vegetables under glass.

Plant Propagation.—Grafting, budding, layering, making cuttings, pollination, seedage, etc.

Spraying.—The theory and practice of spraying plants, embracing a study of materials and methods employed in the combating of insects and fungus diseases.

Orcharding.—A comprehensive study of pomaceous fruits—apple, pear, quince; drupaceous or stone fruits—plum, cherry, peach, nectarine, apricot.

Forestry.—A study of forest trees and their natural uses, their distribution, and their artificial production.

Landscape Gardening.—Ornamental and landscape gardening, with special reference to the beautifying of home surroundings.

Viticulture.—A comprehensive study of the grape and its products.

Nut Culture.—The cultivation and management of nut-bearing trees for commercial purposes.

Floriculture.—Amateur and commercial floriculture, including a study of window gardening, and the growing of cut flowers and decorative plants.

Commercial Horticulture.—A course giving practical training for students intending to follow horticulture as a business. Work in houses, orchards, and gardens.

ANIMAL HUSBANDRY.

Sheep, Mutton, and Wool.—The comparative quality and value of mutton cuts; different grades of wool and their uses in manufactures, together with a critical examination of animals. The development and characteristics of the several breeds; the most successful methods of flock masters and the economic production of mutton and wool for the markets of the world.

Swine and Their Products.—A study of the types and breeds of swine and the most successful methods of growing and marketing their products.

Market Classes, Heavy Horses.—The horse market; an outline of the types and classes in demand; special study of the heavy horse; of uses to which he is put and of breeds suitable for his production, together with best methods of producing and fitting heavy horses for market.

Market Classes, Light Horses.—Coach, carriage, and road horses; bus horses, cab horses, and saddlers; artillery and cavalry horses; a systematic study of their classes and types and of the breeds and methods most suitable for their production.

Stock Breeding.

Meat.—The various cuts of beef, mutton, and pork—their comparative food value, quality, and cost; a critical study of quality and richness in meat; by-products of slaughterhouse and their bearing upon cost of meat.

Market Grades of Beef Cattle.—An outline of the market types and grades, including prime steers, stockers, and feeders. A study of beef type from the standpoint of the butcher, the feeder, and the breeder.

Beef Cattle.—The history, development, and characteristics of the breeds suitable for beef production. Tracing pedigrees, and a critical study of the same.

Stable Management and Feeding.—Stables; stable floors, fixtures and other equipment, and their care; feeding and care of work horses and drivers at labor and at rest; care of harness, vehicles, etc.

The Education and Driving of the Horse.—A critical study of the mental qualities, peculiarities, and limitations of the horse, together with the most successful methods of educating and training him for skilful work at labor or on the road. The rules and practices of correct driv-

ing, the responsibilities of the driver, and the courtesies of the public highway.

DAIRY HUSBANDRY.

Milk.—The character and composition of normal milk; standardizing milk and cream; proper precautions to prevent contamination; the care and uses of milk; practice with the Babcock test and the lactometer.

Dairy Cattle.—The cow as a factor in the economic production of milk, butter, and cheese; the principal characteristics of the dairy cow, with extensive practice in judging; the various breeds adapted to dairy purposes, their history and characteristics, with practice in judging by both dairy and breed standards.

Dairy-Farm Management.—Soiling and pasturing dairy cows; crops adapted to the dairy farm, and best methods of converting these into milk; the place and value of the silo on the dairy farm and the best methods of handling and feeding silage; a study of the best and most economical systems of feeding, together with the care and raising of calves; arrangement, ventilation, and care of dairy barn.

Butter Making.—Ripening the cream; churning, working, packing, and scoring the butter.

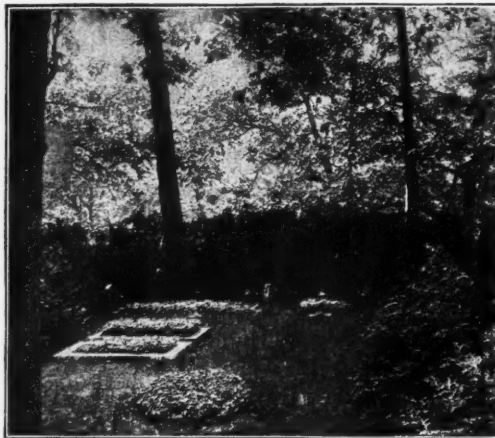
Cheese Making.—Practice in setting milk, cutting and cooking the curd, and pressing and curing cheese. One-half of the time will be devoted to the manufacture of Cheddar cheese and the remainder to fancy cheeses, as Swiss, Edam, Gouda, cottage, etc.

Factory Management.—Co-operative and company creameries and cheese factories; planning construction, equipment, and operation of plants, including care of engines, boilers, and refrigerating machines; a study of the construction and different insulations of creamery refrigerators, both for natural and mechanical means of refrigeration; also practice in pipe cutting and soldering.

City Milk Supply.—Sources of milk, together with methods of shipping, handling, and distributing, and of securing a healthful product for large cities.

Comparative Dairying.—A study of the dairy systems and practice of different countries, including the care and management of dairy cattle.

Dairy Bacteriology.—A careful study of the distribution of bacteria as determined by analysis of air in the open field, dairy-rooms, and dairy barns under different conditions, showing where and to what extent milk may become contaminated thru the air and from the cow during process of milking and subsequently; also how this contamination may be largely avoided by proper methods. The effect of bacteria on milk and on the rapidity with which it sours after being produced under different degrees of cleanliness and held at different temperatures. The part that bacteria play in the ripening of cream and making of butter and in the manufacture and ripening of cheese.



Hawthorne's Grave in Sleepy Hollow Cemetery, at Concord, Mass. [N. E. A. pilgrims ought to visit this cemetery.]

Sound Advice from a Leader in School Gardening.

How to Make School Gardens.*

By H. D. HEMENWAY, Director of the Hartford School of Horticulture.

As sixty-five per cent. of our exports are products of the farm it is almost alarming to think that so few of our children know anything about these products. One reason why nearly ninety per cent. of the successful business men of to-day were brought up on the farm is because of the productive industry taught in early childhood in farm life. There is no kind of training that squares itself for all-round development like agriculture.

The farmers' boys are brought up to use their hands as well as their heads, and learn quick observation and quick decision, which is of great value to them thruout their lives. The child's garden certainly brings his life more nearly to that of the country child than any other form of study.

Making the Garden.

The peculiar conditions of any available place for a garden will have to be considered. Where conditions are favorable for the individual garden this is to be preferred, since it gives a certain amount of responsibility and interest that the general garden does not. It shows exactly what the individual is doing and helps to develop the individuality of the child. Where possible, it is better to grow both vegetables and flowers. In growing crops grow common things.

If the gardens are individual they should be staked out with a stake at each corner, which is driven securely into the ground. It is easier to keep track of the pupils by number than by name, especially if there are many of them. Where the gardens are of large size it is easier to have them longer than wide. If the gardens are open to exposure on all sides the rows should run either north and south or east and west.

It is not wise to use toy tools. The triangular hoe, which strawberry-growers use, will be found efficient for all purposes. Any child large enough to work in a garden can handle a ten or twelve-tooth rake. A line is indispensable and should be long enough to go around the entire garden. If small crops are grown the hand-weeder will be found useful. Where the children spade

* From "How to Make School Gardens," a Manual for Teachers and Pupils. Used by permission of the author and the publishers. Copyright, 1903, by Doubleday, Page & Company.

up their own gardens the spades should be smaller than the ordinary garden spade.

Perhaps the most serious problem, especially to the city school, after the necessary land has been obtained, is, How shall we prepare and properly fertilize it? This is a difficult question to answer, as the soil is hardly alike in any two places. While fertilizers are usually necessary tillth is of far greater importance.

If the plot of ground is large enough it should be thoroly plowed. Where the sub-soil is very compact the plow should be followed in the same furrow with the sub-soil plow. Small lots, too small to be economically plowed, should be thoroly spaded, and, where the sub-soil is impervious, it can be trenched. If the ground is in turf it should be well turned and then thoroly harrowed.

If the land is not in turf, or if the turf is decayed after plowing, it should be replowed, running the furrows in the opposite direction. If spaded, the soil should be turned deep. It can again be lightly spaded. The aim should be to give thoro tillage to obtain all possible from the land, and then apply fertilizers to get more.

The valuable plant food in farm manures is not so quickly available as in high-grade commercial fertilizers, but they have the additional value of supplying humus, which lightens the soil, increasing its power to hold water. If the manure is coarse it should be rotted to increase its availability before applying.

Commercial fertilizers can be bought and applied separately or in combination. It must be remembered that they are very powerful and should never be placed in contact with roots or seeds, but should be mixed with the soil.

If the crop to be grown is an early maturing one commercial fertilizers are best, as farm manures are not early available. For medium and late maturing crops farm manures are much the best. The whole problem of manuring is a local one and is best determined by experiment.

Some of the Lessons in Garden Work.

LESSON I.

Plant one row of potatoes five feet from the west end. Dig a furrow three inches deep and plant the pieces (of potato tubers) about one inch apart, beginning at the line. Cover at least two inches with mellow soil and pat down with the back of hoe.

Plant, two feet east of potatoes, one row of cabbage seed in hills two feet apart. Sow five or six seeds in each hill. Make the hill by loosening the soil with the hoe and removing about one inch of soil. Cover the seed one half inch with fine soil and make it firm over the seed.

Plant, five feet from east end, one row of lettuce. Mark out the row about one-half inch deep and sow the seed one to two inches apart. Cover with fine soil one-fourth inch and press it down.

Plant, one foot east of lettuce, one row of radishes. Mark out the same as for lettuce. Cover one-fourth inch with fine soil and press down. Use your line in marking each row. Measure with hoe-handle.

LESSON VIII.

Hoe between all rows and hoe over the south and west walks.



SCHOOL-GARDEN EXHIBIT, SCHOOL OF HORTICULTURE, HARTFORD, CONN.

Plant, one foot from the south end, one row of Dianthus pinks. Put two or three seeds every eight inches, beginning at the line. Have the ground soft by hoeing deep.

Two feet from south end plant one row of asters eight inches apart, the same as the pinks.

Pull all weeds in the rows and leave a soil mulch over the whole garden. Use the weeder near the plants.

Pick and kill all potato beetles.

Pick all flowers and pull the radishes and lettuce that are ready.

LESSON XIX.

Pull all weeds and leave a soil mulch over the whole garden.

Thin beets to three inches apart, transplanting where necessary to fill out the row.

Turn melon vines into garden and pinch off the ends.

Plant one row of radish seeds six feet from the north end.

Clean south and west walks and pick flowers, lettuce, and tomatoes that are ready.

Agriculture in Town High Schools.

To aid in the movement for the organization of secondary courses in agriculture, the committee on methods of teaching agriculture of the Association of American Agricultural Colleges and Experiment Stations made a report on this subject to the convention of the association held at Atlanta, Ga., in October, 1902. The portion of this report which relates to the public high schools is given below:

In addition to provision for instruction in agriculture in connection with the colleges and special agricultural high schools the teaching of agriculture should be introduced into the public high schools in or near the rural communities. There are many villages and cities in the United States which are dependent on the farms surrounding them for their commercial prosperity, if not for their very existence. The high schools maintained in these places draw their students largely from the farms. There is good reason why communities of this kind should seek thru their schools to promote the interests of the industry to which they owe so much. They should at least co-operate with the surrounding rural communities to secure for the farmers' children technical education in agriculture parallel to the education in commercial business and mechanic arts which many of the city high schools are now offering to their students.

As previously stated, the high-school system of the United States has been rapidly developed in the past few years in the direction of broadening the courses in natural science and industrial arts and in the provision for numerous elective courses in these and other subjects. While it continues to supply college preparatory courses for the limited number of students intending to pursue their school career beyond the high school, its chief business is to educate the nine out of every ten of its students who are to step from its halls into active life. In our largest and wealthiest cities this change of aim of the high school has led to the establishment not only of numerous courses in the classics, modern languages, natural sciences, mathematics, history, and political economy, but also of separate high schools with elaborate courses in business forms and mechanic arts. The smaller cities are striving to follow in the same path as far as their means will permit.

Agriculture has thus far been almost entirely neglected in the high-school programs, and it is high time that the friends of agricultural education should make a systematic effort to have the claims of this fundamental industry acknowledged and satisfied in the curricula of the high schools. Since successful agriculture is essential to the prosperity and well-being of urban as well as rural communities, there should be co-operation between country districts, villages, cities, and the states to provide the

means for the maintenance of agricultural courses in the high schools.

As a practical measure it is believed that such courses may be added to those already existing in many high schools by the addition of a single teacher, who should be an agricultural college graduate, to the teaching force already supplied. The expense of maintaining this teacher and his equipment may properly be shared by the state, the village, or city maintaining the high school, and the country district from which the pupils from the farms are drawn to this school. The state may properly aid this movement by offering a stated sum annually to high schools maintaining agricultural courses. Already many small townships are paying the tuition of pupils attending high schools in neighboring townships, and this system should be extended with the proviso that such tuition fees paid for students desiring agricultural courses should be devoted to the maintenance of agricultural courses. The balance necessary to maintain these courses will, it is believed, be cheerfully paid by the villages or cities maintaining the high schools as soon as they realize that such expenditure is in the nature of an investment, the returns from which in the way of better and more abundant agricultural products will be certain and remunerative.

In order that it may be apparent that agricultural courses may be offered in the high schools without any violent or radical reorganization of existing programs for such schools, a number of tentative schedules for such courses are presented herewith along with various courses already existing in high schools in different parts of the country. An examination of numerous high-school programs has revealed a very great variety in their courses as regards the number of different branches and the amount of time devoted to each branch in any particular course. In general, however, it may be said that the average high-school course in this country presupposes that the student has had an eight-year course in a primary school, where he has been taught reading, writing, spelling, arithmetic, elements of English grammar and composition, geography, and United States history. The best primary schools also give some instruction in drawing, music, nature study, and woodworking or sewing, and cooking.

With the introduction of agriculture into the high-school course, it is presumed that the courses in physics, chemistry, botany, and zoölogy will be so shaped as to form an appropriate introduction to the more formal instruction in the different branches of agriculture, i. e., agronomy, zootechny, dairying, rural engineering, and rural economy. We would include under agronomy whatever is taught regarding climate, soils, fertilizers, and the botany, varieties, culture, harvesting, preservation, uses, and enemies of farm crops; under zootechny, the theory and practice of animal production, including the breeding, feeding, hygiene, and management of farm animals; under dairying, the principles and methods involved in the handling and sale of milk for consumption and in the making of butter and cheese; under rural engineering, principles, and methods involved in the laying out of farms, and the construction and use of farm buildings, systems for water supply, irrigation, drainage, sewerage, roads, and machinery; under rural economy, the history of agriculture, capital, labor systems, cost of production, marketing, records, accounts, etc., as related to farm management.

The forty-first University Convocation of the state of New York will be held in the senate chamber at Albany, Monday and Tuesday, June 29-30, 1903. Sessions begin promptly at 9:30 A.M., 3:00 P.M., and 8:00 P.M. Special railroad rate is one fare and one-third for the round trip. Get "Trunk line" certificate of agent selling ticket to Albany between June 25 and June 30.

The program will be found on another page of this number.

For further information address James Russell Parsons, Jr., M.A. LL.D., secretary of the Board of Regents, Albany.

Centralization of Rural Schools.

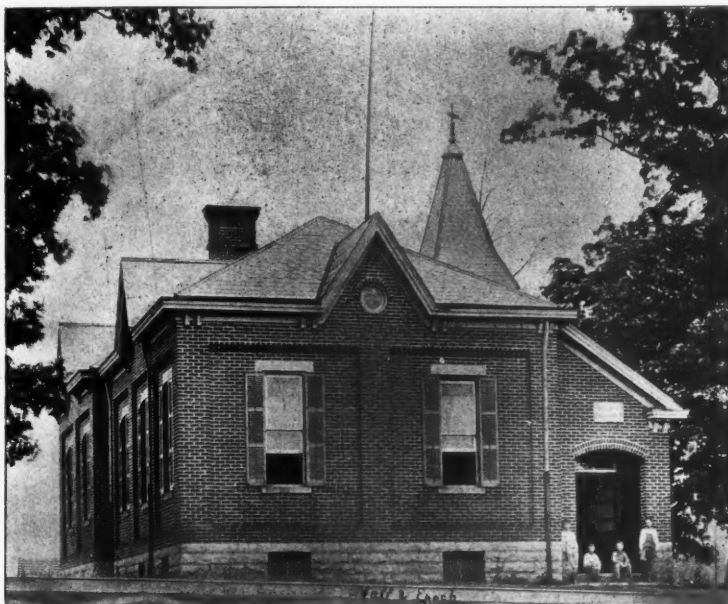
One of the greatest problems of to-day which America is compelled to face is the rural problem. The constant desire seems to be to get away from the farm and from the country. When we consider the conditions that exist in most of our rural districts, it does not seem surprising that this state of affairs exists.

In the first place there are poor schools—a frequent cause for moving to the city. Then there is in many cases ignorance of anything higher than mere existence, and also ignorance of what awaits them in the city. All these points can be ascribed to lack of education and they are conditions that occasion the present rural problem.

In other words, the rural problem is really the problem of the rural school. The country schools may have done the wonderful work in the past that we are constantly hearing about, but according to present day ideas they are more pitifully weak. The teachers are poor, not only lacking knowledge of methods but also of the simplest subjects they must teach. The interest of the pupils has fallen off, and from lack of stimulus to keep them at their work the attendance has fallen off. No wonder rural conditions have been deteriorating.

But the rural school problem has been solved, in a great measure, by the simple expedient of centralization of township and district schools. This is known as the Ohio plan for in that state it has achieved its greatest success. Nearly forty townships in the state have adopted the plan.

The local schools are abolished under this system. A school in a central position is selected. The pupils are transported at the public expense from their homes to the school. The general result is better schools, more



First Township High School in Mad River Township, Ohio.

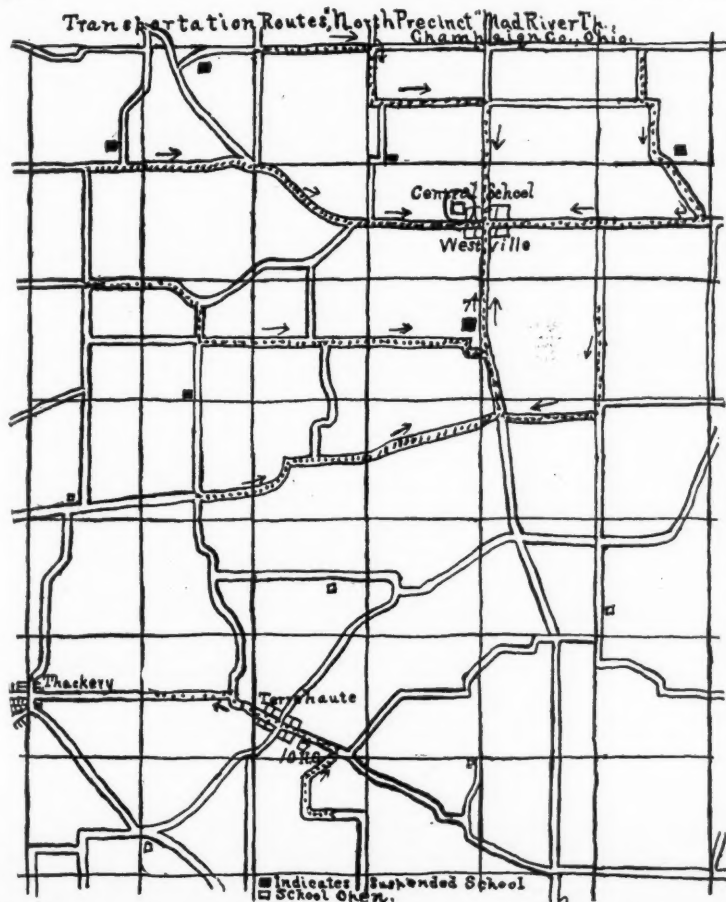
interesting schools, an increased attendance and decreased expense.

This solution of a troublesome problem is all the more satisfactory because the system is practically applicable everywhere. In Ohio, for instance, there are probably no townships that support any system of sub-district schools, which could not support a system of centralized schools.

The first effect of the consolidated schools visible to the taxpayer is the increased size of the school-house. What a contrast the centralized school building of two stories, many rooms; steam heat, and commodious stables is with the log or slight frame district school, with one room, a stove, and lean-to shed!

The contrast has been well illustrated in Green township, Ohio. Before 1900 there were seven or eight box-like, one-room structures distributed over the township. The township is five miles square, eleven miles from one railroad and six from another. A central school was voted, and a two-story brick structure was built. It contains six school-rooms, a library, and an office. A basement is equipped as a laboratory and gymnasium. There are three acres of land around it. Shade-trees, school-room decorations, and a library are a few of the things unknown before its appearance. Here eight wagons bring the children of the entire township where they enjoy the benefits of sanitary seating, lighting, heating and ventilation.

The attendance of transported pupils is almost perfect, for it suffers little from the weather, and it is a great increase over the number enrolled in the old schools. This is a logical result of the plan. These children live constantly in





Centralization School at Kingsville, Ohio.

Courtesy of State Supt. Thomas C. Miller, of West Virginia

rural surroundings. For them doubtless, the great excitement has been to go to the county seat. The reason for the general church attendance in country districts may be more often found to be due to the excitement of seeing their neighbors than to any fervid religious interest. The psychology of the crowd is a subject which has never been deeply developed, but of its force there can be no doubt. With this in mind it is not difficult to realize how the centralized school must bring out the children of school age.

The item of expense has been the great stumbling block in the way of the expansion of the system. It means that a new school-house must be built, and transportation provided. It has worked out that the expense of the separated schools is only a small amount less than with the central school;—there is, for instance, a saving of a large amount of fuel; the keeping up of repairs on fences, pumps, walks, and roofs are reduced seventy-five per cent.

The educational advantages of the scheme are self-evident. Classification of pupils is possible. Larger classes stimulate interest. Progress can be made by the pupils. Better teachers can be engaged.

Who that ever knew anything about the district school will not remember the "confusion worse confounded" that existed in the classification of pupils? A

single pupil might be in the first class in spelling, the second in writing, the third in reading and so on down the list. The tremendous waste of this system is obvious. The pupils never advanced. There seemed to be no point to aim at in the scheme. The child soon grew discouraged and left school. With the centralized school the pupil may be carried thru a continuous course of study, one subject being correlated with another until the child leaves the school with a good grasp on the essentials of a common school education. The other pedagogical advantages of this system are to a great extent obvious. They can be summed up in the statement that a better teacher is given an interested class to teach and that she has the ability and time to teach it.

Great as are the advantages of the centralized schools from a strictly professional educational standpoint, their importance from a social side is even

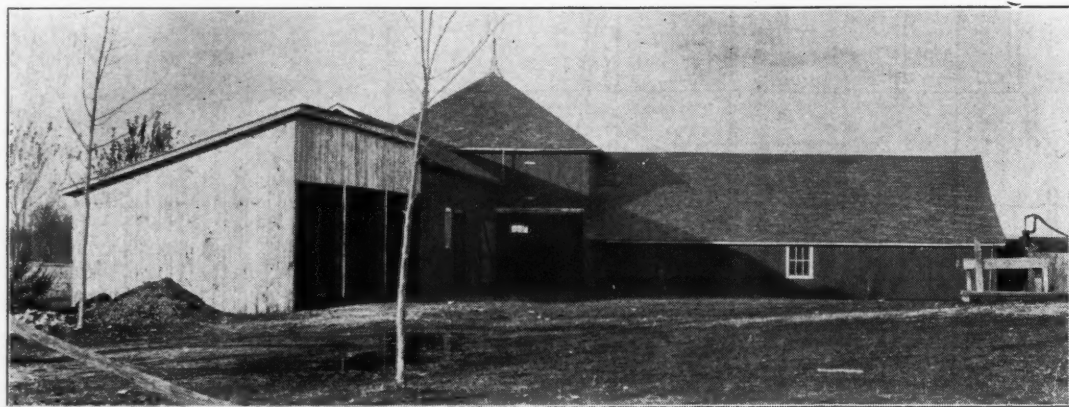
greater. They are the only hope in meeting the moral and social conditions of the rural parts of our country



First wagon used in western Ohio to transport children to school, 1897.

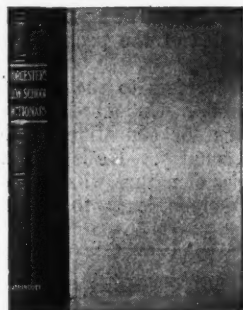
which, too often, are worse than anything found in any city.

In the first instance, since such a large per cent. of



Stables located on same lot as house above. Room for all horses and conveyances used by pupils in going to the school. Mow and cribs for small quantities of hay and corn.

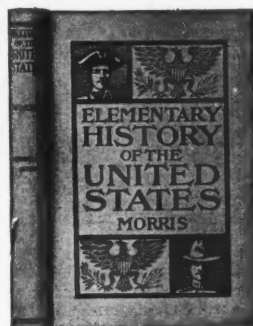
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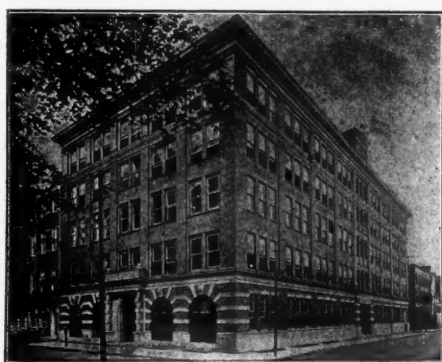
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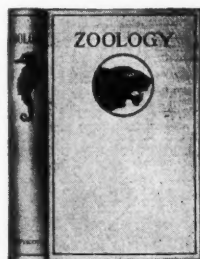
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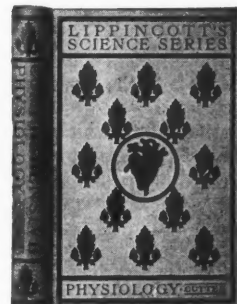
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our people are in the cities and villages, there is a great and increasing demand on the farmer for the products of the soil. This increased production will be secured by giving the farmers' sons and daughters a proper knowledge and mental discipline for under-



Supt. John J. Richeson, Westville, Ohio.

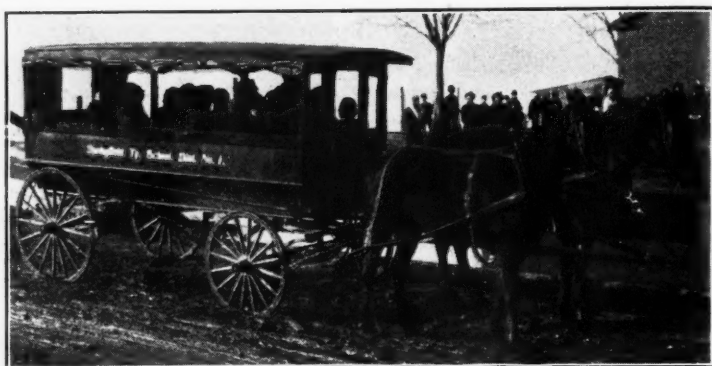
standing the principles of scientific agriculture, so that they will be able to gain profit from the farmers' papers, bulletins, reports, and texts on the different branches of the subject.

Another result which may be hoped for as a result of the betterment of the rural education is that the country children may gain a proper perspective of the real conditions of existence and so be inclined to remain in their own homes. The exodus from the country to the city is a serious factor in our national economics, to say nothing of the deleterious effect it too often has upon the individual. The broadening influence of a better education may be expected to aid in settling this question.

Not the least necessity for bringing the

country schools together is considered by many to be the possibility of restoring the old debating and literary exercises, and the playing of invigorating games where enough take part to make them a real pleasure. If such a result is accomplished the community life will be broader, brighter, and the plane of the people must be higher.

A last word refers to the educational side for the child. Undoubtedly the natural conditions for educating a child are found in the country. He is surrounded by the beauties of nature, which, when intelligently observed, leads to the better



Same wagon as the one just above this, in fall and spring dress.

interpretation of literature, science, and art.

The centralized school means for the rural districts, a broader life, better roads, good libraries, greater opportunities for expression, trained teachers, and more valuable members of society.

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*From the report of the Office of Experiment Stations, by A. C. True, director.



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ages and attainments has there been remarkable activity.

A new enterprise in agricultural education has been inaugurated by the establishment of the Graduate School of Agriculture, which held a four weeks' session during the month of July, 1902, at the Ohio state university, Columbus, Ohio. The plan for this school was originated by Prof. Thomas F. Hunt, dean of the college of agriculture and domestic science of the Ohio state university, the purpose being to establish a school for advanced students of agriculture at which leading teachers and investigators should present summaries of the recent progress of agricultural science, illustrate improved methods of teaching agricultural subjects, and afford a somewhat extended opportunity for the discussion of live topics drawn from the rapidly advancing science of agriculture. This idea received the cordial approval of President Thompson, of the Ohio state university, and on the recommendations of these two men the board of trustees of the university voted to establish such a school and generously made provision for the financial support of its first session.

The Association of American Agricultural Colleges and Experiment Stations at its convention in 1901 favored the plan for the school and voted that if the success of the first session seemed to justify its continuance, it be made a coöperative enterprise under the control of the association. The U. S. Secretary of Agriculture also expressed his cordial approval of this movement, and on his advice the director of the office of experiment stations consented to act as dean and other officers of the Department of Agriculture to be members of its faculty. Courses were offered in agronomy, zootechny, dairying, and breeding of plants and animals. The school was housed in the substantial and well-equipped agricultural building of Ohio state university, where were illustrated the most improved apparatus of instruction in soil physics, dairying, and other agricultural subjects. Besides the live stock of the university farm, leading breeders of Ohio furnished choice animals for the stock-judging exercises.

General problems of agricultural science and pedagogy were discussed at the inaugural exercises and at Saturday morning conferences. Among the topics thus treated were the history of education and research in the United States; the organization of agricultural education in colleges, secondary schools, nature-study courses, correspondence courses, farmers' institutes, and various forms of university extension; what constitutes a science of agriculture; and methods and value of coöperative experiments.

Thru social assemblies, visits to typical Ohio farms, and much informal discussion whenever the students met each other, the educational influences of the school were greatly extended. Seventy-five students were in attendance. These were drawn from twenty-eight states and territories, including such widely separated regions as Maine, Oregon, California, New Mexico, and Alabama. There was one student from Canada and one from Argentina. There was also one woman, and the colored race was represented by teachers from the Tuskegee institute and the North Carolina agricultural college.

Considering the character of the faculty and students, it goes without saying that the whole period of the session was occupied with the most earnest and profitable work. Without doubt the influence of this school will be felt thruout the country in the improvement of courses of instruction in agriculture and the strengthening of the lines and methods of investigation of agricultural subjects. In other ways the school will exert a beneficial influence. So rapid has been the accumulation of materials for a real science of agriculture during the past few years that even professional students of agriculture have not realized how large a mass of knowledge is already available for molding into a systematic body of truth which may be utilized for pedagogic purposes, as well as for inductions of scientific and practical value.

The summaries given by the experts gathered at this graduate school have emphasized this fact and shown in

a striking manner that agricultural education and research may now be properly and efficiently organized with reference to the science of agriculture itself rather than be, as heretofore, very largely a matter of the sciences related to agriculture. This will serve to stimulate greatly the movement already begun for the reduction of materials of agricultural science to "pedagogic form" for use in colleges and secondary schools, and for the reorganization of agricultural institutions of research on the basis of the divisions and subdivisions of agriculture, instead of physics, chemistry, botany, and other primary and secondary sciences. The day will thus be hastened when the science of agriculture will rank with such tertiary sciences as geology, geography, and medicine as one of the great systems of knowledge of direct benefit to mankind.



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How Gardening is Carried on in a British School.

An Example for Cis-Atlantic Teachers.

The School Gardens at Boscombe.*

By T. G. ROOPER.

There are two ways of setting boys at work gardening. They may either cultivate a plot in common, or each boy may be provided with a plot of his own. The latter plan is the better, because it offers superior educational advantages. If, for example, a boy is one of a group cultivating a garden, he cannot know for certain what is the effect of his share in the work. It is only when a boy is sole master of a plot of his own that he can be sure what the results of his efforts really are—whether meritorious or defective.

Objects of School Gardening.

A school garden must not be treated as tho it were an allotment. The difference is important, because, if it is ignored, the school garden may prove a pecuniary success but an educational failure. The owner of an allotment naturally seeks to make the greatest commercial profit out of his parcel of land. In the school garden, on the other hand, the boys have partly to receive instruction in the rudiments of the gardener's craft, according to the best methods, and partly to find illustrations for their lessons in natural science, and to make practical application of them.

In an allotment the owner often finds it pays better to grow one or two kinds of crops either for the sake of the demand for them in the market, or because the soil is best suited for them. The school boy should learn how to raise a variety of crops, and will benefit educationally as much by failure as success. Indeed, where the conditions of soil and climate are so favorable that, be the gardening good or bad, the crop is always forthcoming, tho the undertaking may prove a greater commercial success, yet as an educational exercise it will have less value than where nature is unkindly and hard to subdue.

Again, the object of a school garden is certainly not to put boys as apprentices to gardening. Some boys, no doubt, who learn gardening, will become gardeners in a professional way when they grow older, but it would be wholly out of place in school unless it served a general purpose as well as having a technical aim.

School Gardens in General Education.

A very slight acquaintance with modern text-books and their readers, whether dealing of the farm, or the garden, or the home, is sufficient to show that while many of the plain facts of modern science are assumed by the writers to be matters of general knowledge, most of the readers continue to regard such facts as outside their province and belonging to the peculiar domain of men of science.

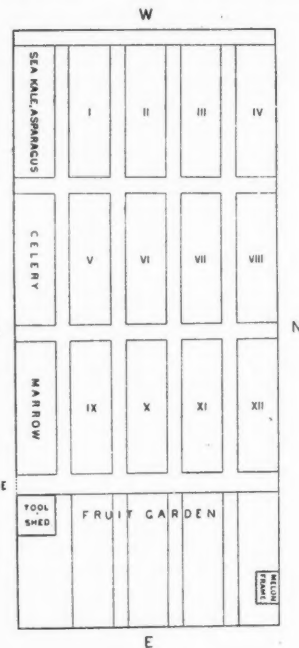
Some knowledge of the nature of a few of the chief gases and other elements is really indispensable for the farmer, the gardener, and the housewife, and it may be acquired in more ways than one. While a girl may study it in connection with cooking and cleaning, a boy may have it brought home to him in connection with a garden plot.

Division of the Ground.

Each boy should, as before stated, have a plot to himself, and in the Boscombe School gardens there are plots for twelve boys. The plots must not be too large, because the boys cannot work more than two afternoons a week. The shape, again, is important, because it is desirable that the boys should be able to perform much of their gardening while standing on the paths between the plots, instead of having to step on the border for every operation. The plots, therefore, measure thirty

feet in length and are only ten feet in width. The four corners of each plot are carefully marked by substantial squared pegs firmly driven into the ground. Each plot is numbered, and the numbers are written clearly and boldly on the face of the pegs.

The longer axis of each plot extends in the direction of east to west, and the width is in the direction of north to south, because this plan gives them the best chance of thriving. Each particular kind of vegetable is planted in the same line right across all the plots, so that altho in the separate plots the rows are short, being only ten feet long, yet, when the whole set of plots is looked at in one view, the vegetables are seen to be planted in long rows extending across the garden in regular lines, from the north boundary to the south. The comparative success of each boy is thus apparent.

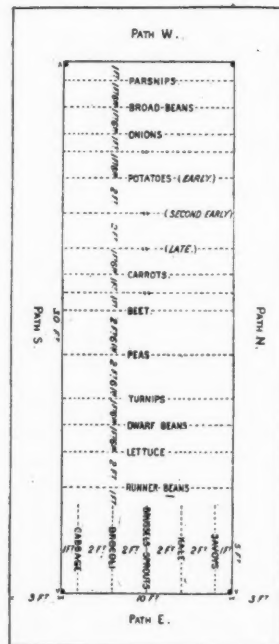


Planting a Plot.

I will now describe the first planting of one of the plots. All the others were planted in the same way. A succession of late autumn and winter vegetables is arranged as follows:

- Broad beans.
- Hollow crown parsnips.
- White Spanish onions.
- Bedfordshire Champion onions.
- Radishes.
- Lettuce (two rows, cos and cabbage).
- Potatoes (three rows—early, medium, and late).
- Brussels sprouts.
- Cauliflower.
- James' intermediate carrot.
- Shorthorn carrot.
- Pineapple beet.
- Cabbage (Wheeler).
- Drumhead savoy.
- Autumn cauliflower.
- Scarlet runners.

The scarlet runners were planted on the side next the road, and served as a screen against the depredations of roughs and idlers, who, in the absence of the



boys, would occasionally steal their best vegetables.

Plots for Working in Common.

Besides the ground which was taken up by the twelve plots and the paths between them, the enclosure contained space for two other purposes.

* From a special report prepared for the English Parliament.

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(a) Along the southside there was a border, about one hundred feet in length and ten in width, for growing certain vegetables which did not lend themselves readily to separate treatment in the twelve plots, such as asparagus, marrow, and seakale. Here, too, were planted several pot herbs, such as thyme, sage, marjoram, etc., and also seedlings to be transplanted later to the other plots, such as lettuce, celery, leeks, sprouts, and cabbage.

(b) At the east end of the ground there was space for four plots of the same size as the twelve others—namely, thirty feet by ten—in which certain fruit trees were planted, including apples, pears, and plums, and also such bush fruit as currants, gooseberries, and raspberries. Room was also found for some tomatoes, a strawberry bed, and a few herbaceous flowers, by way of ornament, and some roses.

In the northeast corner a small frame, 6 ft. by 4 ft., was placed for the purpose of growing seedlings, which might thus be preserved thru the winter for early spring planting. In these plots the boys learned how to bud roses, to train fruit trees, and to make grafts in different ways.

Care of Tools.

The ground was enclosed by barbed wire fencing, which was stretched upon strong posts. Inside this fence was planted a privet hedge, in which were set at intervals a few trees, such as poplars, maple, birch, and ash.

At the gate of the enclosure a wooden hut was built for the accommodation of the tools and seeds. It is made of tarred boards, with a corrugated iron roof. In its dimensions it is nine feet square, and its height at the back is nine feet, sloping towards the front to six feet, where the entrance is made. The floor is paved with brick, and suitable shelves are provided.

Each plot has a set of tools assigned to it, and each tool is numbered to correspond with the plot to which it belongs. Each set of tools hangs from a peg which is

numbered in correspondence with the tools. The boys are taught to keep their tools scrupulously clean by aid of linseed oil and paraffin, and to put them away in an orderly manner after using them.

List of Tools.

The following is a list of the tools provided for each plot. The sizes given are adapted to boys' use:

- 1 Dutch hoe (four-inch).
- 1 Draw hoe (four-inch).
- 1 Fork (four-prong).
- 1 Spade (seven inches wide and eleven inches long).
- 1 Rake (ten-comb).

Besides these there are other tools to be used in common. They include:

- 1 Besom.
- 1 Mallet.
- 2 Wheelbarrows.
- 1 Water can.
- 2 Boat baskets.
- 4 Lines, sixty feet in length.

The diagrams show the details of the arrangements which have been described.

Good and Bad Gardening.

The soil was of the worst possible description, consisting of almost pure gravel. The boys had obviously to overcome natural difficulties. Cultivation was commenced by trenching to a depth of two feet, which involves digging out three spits. Stable manure was applied somewhat liberally at the bottom of the trench. The summer of 1896 was very dry, but, owing to this "bastard" trenching, altho there was no artificial watering, the fine growth of the crops in these plots as compared with the scanty show in neighboring gardens, where there was far less labor expended, proved the truth of the old saying, *justissima tellus*, for the honest earth well repaid all the toil.

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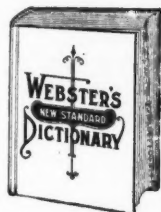
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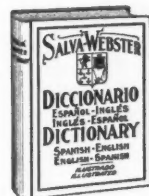
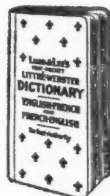
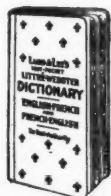
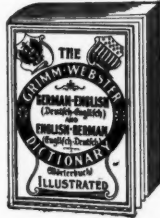
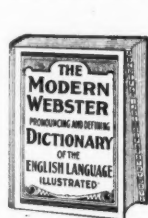
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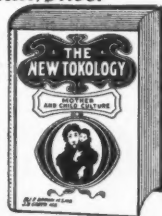
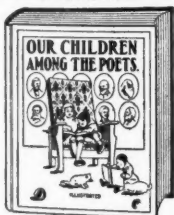
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The produce of the gardens received certificates of merit at more than one horticultural show. The contrast between the results of good and bad gardening forms a most telling object lesson, and the difference in the crops according as the boys are more or less skilful, or as they are careful or careless, is well demonstrated by the arrangement of the rows of vegetables which cross the plots in a straight line.

Diary and Record Book.

The boys are taught to make rough notes on the ground, recording the operations of each day, the dates of planting seeds, and the names of the sorts selected. Hints are added as to the distance between the rows of plants, and also between the plants in a row, and a record is made of the kind of manure which is used, and other matters. A daily record of the weather is kept, and the amount of rainfall observed and noted. The notes are afterwards worked up in a systematic form, and serve as a gardener's diary of great value for future use when in later life the boys do some gardening of their own.

Extract from a Boy's Diary.

March 15.—Sowing onion seed. White Spanish and Bedfordshire Champion. One row of each, one foot apart; made drill about three inches deep; after sowing the seed, raked the soil over them and patted it down with the spade.

March 22.—Trenching and manuring. The broad beans and peas are showing above ground.

March 23, 26, 29.—Trenching, manuring, and weeding.

April 2.—Finished trenching on all the plots to-day. Edging and weeding paths.

May 14.—Sowed one row of cabbage plants with four different kinds of artificial manure, namely:

Two rows with nitrate of soda.

Two rows with nitrate silicate.

Two rows with native guano.

One row with ichthemic guano.

Account Books.

Each boy sold the produce of his own plot, and the money so earned was brought to the instructor, who received it and entered the amount in an account book, reserving a separate page for each plot. Each boy also kept an account book of his own, so that he might feel sure that he received his proper share. The money is divided, and one-half is devoted to the purchase of seeds for the next season, while the other half is given to the boys in proportion to their earnings. In this way some boys earned as much as eight shillings in the year, while the average was about six shillings.

In conclusion I may add that a year's garden work had a strikingly beneficial effect upon the growth and physical development of the boys who had thus done their part to carry out the somewhat neglected instruction to man to go forth and till the ground from whence he was taken.

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Beginnings of the Movement.

School gardens of the two types mentioned are mostly modern institutions. No concerted movement for their establishment dates back more than thirty five years. Aside from Germany, where two or three states gave encouragement to the establishment of school gardens, over eighty years ago, Austria and Sweden were leaders in the movement and were practically contemporaneous in giving official encouragement to it. The Austrian Imperial School law of March 14, 1869, prescribed that, "where practicable, a garden and place for agricultural experiments shall be established at every rural school." In Sweden, seven months later, a royal circular was published which required school gardens, averaging from seventy to eighty square yards, to be appropriately laid out. In both countries the movement had rapid growth. In Austria the number of school gardens in 1898 was estimated to be over 18,000, and in some of the Austrian provinces there is not a school without a garden. In Sweden the number of school gardens in 1894 was 4670.

In Belgium, since 1873, a law has been in force requiring that each school have a garden of at least thirty-nine and a half square rods, to be used in connection with instruction in botany, horticulture, and agriculture. In Switzerland an active campaign for the establishment of school gardens was begun in 1881 by the Swiss Agricultural Society, and about 1885 the federal government began to subsidize school gardens and to offer prizes for plans and essays on the subject. School gardens are maintained in connection with normal schools, and in that way the teachers receive special training which enables them to make the best use of these important institutions. In Belgium a remarkable impetus was given

to vegetable gardening, a matter of great importance in that densely populated country. In Switzerland, according to a recent consular report, one can see flowers, vegetables, fruit trees, or shrubbery planted "on every foot of ground—on the front, sides, and rear of houses."

In 1880, the French ministry of education decreed that such instruction should be given in the normal schools as would enable their graduates to "carry to the elementary schools an exact knowledge of the soil, the means of improving it, the methods of cultivation, the management of a farm, of a garden, etc." There are one hundred such normal schools, many of the graduates of which go to agricultural colleges for the more thorough training in agriculture and horticulture which will enable them to direct intelligently the school garden work in the elementary schools. Since 1887 no plan of a school building in the country, to which the state contributed support, has been accepted unless a garden was attached to it. As a result, there are now, in France, over 28,000 primary or elementary schools, with gardens attached.

The German government has taken no official action regarding the establishment of school gardens, preferring rather to allow the different states to take the initiative. But there are a great many school gardens in the empire, among them some of the best we have in the world, including a number of large gardens which combine fruit raising, the growing of flowers, and the raising of vegetables in individual plots by the different pupils. It is not an uncommon thing in German schools to find the master in the garden giving instruction to the boys while his wife is in the house teaching the girls to cook and sew.

Russia has made considerable progress toward the introduction of school gardens. The movement began in the '70s, but did not advance very rapidly until encouraged by the ministry of agriculture and imperial domains in 1887. At that time the ministry began distributing plants and seeds, sending out expert gardeners to in-

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struct teachers and to organize and direct garden operations, organizing courses of study in certain branches of agricultural science and distributing to some of the more energetic teachers implements, seeds, and manuals, and other books on gardening. More recently the czar has expressed his approval of the movement, and the ministry of public instruction has co-operated with the ministry of agriculture and imperial domains in promoting the work. In 1897, Russia had nearly 8,000 school gardens, many of which contained also colonies of bees and silkworm hatcheries. For the purpose of training teachers

for this work short courses have been held during the spring and summer months since 1891.

Of the other countries of Europe, Italy is giving the matter some attention, and in Great Britain there is great activity along these lines.

American School Gardens.

In the United States school gardens were unknown twelve years ago; now they are found in fourteen or fifteen different states, and in perhaps fifty or seventy-five different cities and towns. What was probably the first

school garden in the country was started in 1891 at the George Putnam grammar school, Boston, by Henry L. Clapp, master of the school. For nine years this garden was devoted exclusively to wild-flowers, ferns, and a few hardy cultivated flowers, but, in the spring of 1900, a kitchen garden was started on a vacant lot in the rear of the school-yard, and has been continued successfully up to the present time.

The movement has grown to immense proportions. In this country it is still looked upon by some as a fad, but in Europe it has long since passed that stage. Experience in the United States, as well as in Europe, has demonstrated the value of school gardens in many different ways.



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Educators Who Died During the Year.

July 1, 1902 to March 3, 1903.

The past year has taken from our numbers a few of the best-known and most influential leaders in the educational world of America. The names of Dr. White, Dr. Shaw, Dr. Curry, and Mrs. Palmer are with us only in memory and in the good they have done. Yet on the whole the number of those who have passed from among us is unusually small as compared with former years. Some of the names must be omitted from these columns, but as one name after another is passed over, there arises the comforting thought that tho they are dead yet they live, and their influence will be felt in hundreds of lives in the years to come.

Dr. John D. Runkle.

Dr. John D. Runkle, professor emeritus of mathematics in the Massachusetts Institute of Technology, died July 8, 1902. He was one of the organizers of the institute and president of the institution from 1870 to 1878. This was the most trying period in the history of the school, and its successful passage thru the difficulties was largely due to his efforts. The laboratory method of teaching was practically originated by him, and he introduced laboratory work into this country.

Dr. Gallaudet.

Rev. Dr. Thomas Gallaudet, the "apostle to the deaf mutes," died on August 27, 1902. The greater portion of Dr. Gallaudet's life of eighty years was spent in the improvement of the welfare of deaf-mutes.

Major Powell.

Major J. W. Powell, director of bureau of ethnology of the Smithsonian institution, died September 23, 1902. He stood among the first in his profession thruout the world, and was famous as the first explorer of the Grand Cañon of Colorado. He had been identified with government scientific work for more than thirty years.

Dr. E. E. White.

The teachers' friend and teacher, our beloved friend, Dr. Emerson Eldridge White, died October 21, 1902. Dr. White was born at Mantua, Ohio, in 1829. He was

educated in the common schools of his native state and at Cleveland university. In 1851 he became principal of one of the Cleveland grammar schools. In this position his study of education as applied to school practice led to his appointment to the principalship of the Central high school, of Cleveland. Later, as superintendent of schools at Portsmouth, Ohio, he introduced methods far in advance of those generally employed.

He served as state commissioner of the Ohio schools for three years; as president of Purdue university from 1876 to 1883, and also as superintendent of schools at Cincinnati. For a number of years he devoted himself to writing and lecturing, and his series of arithmetics and his "Elements of Pedagogy" are well known thruout the country.

Professor Rood.

Prof. Ogden Nicholas Rood, head of the department of physics in Columbia university, died on November 12, 1902. He was called the "Father of American Experimental Physics." Born at Danbury, Conn., in 1831, he was graduated from Princeton in 1852, and studied at Yale, Berlin, and Munich. He taught in Troy until called to Columbia in 1864.

Alice Freeman Palmer.

The accomplished teacher, educator, and college president, Alice Freeman Palmer, died in Paris on December 6, 1902. Mrs. Palmer was born at Colesville, N. Y., in 1855. After graduating from the University of Michi-

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gan, she taught successively at Lake Geneva, Wis.; Saginaw, Mich.; and Wellesley college. From 1881 to 1887 she was president of the latter institution. She resigned this position to marry Prof. George Herbert Palmer, of Harvard university. Later she acted as dean of the Woman's Department of Chicago university. She was the commissioner of Massachusetts to the World's Fair at Chicago, a member of the Massachusetts state board of education, president of the Woman's Educational association of Boston, trustee of Wellesley college, president of the corporation of the Institute for Girls in Spain, and she held many other positions of trust and honor.

Edward Conant.

Edward Conant, the grand old educator of Vermont, for so many years principal of the Randolph State Normal school, died January 5, 1903. Born in Pomfret, Vt., in 1829, and educated at Thetford academy and Dartmouth college, he left the latter institution in his junior year, to engage in teaching. For three years he was principal of the Royalton academy, and one year principal of the Burlington high school. In 1861 he became principal of the Orange county Grammar school, at Randolph, which was changed to a normal school in 1867. Mr. Conant remained at the head of this school until his death, except for a period of six years, when he was state superintendent of education, and for two years principal of the Johnson State Normal school.

Dr. Edward R. Shaw.

Educational circles suffered a deep loss thru the death of Dr. Edward R. Shaw, on February 11, 1903. Dr. Shaw was a graduate of Lafayette college, and he received the degree of Ph.D. from New York university in 1890. After his graduation he taught in the district schools of Long Island and was principal of the Yonkers high school for nine years, beginning with 1883. In 1890, when the School of Pedagogy of New York univer-

sity was first opened Dr. Shaw became lecturer upon educational classics. In 1892 he was called to be professor of methodology. The title of his chair was enlarged to institutes of education in 1893. In 1894, upon the death of Dr. Jerome Allen, he became the dean of the school, where he remained until 1901, afterwards continuing his work in institutes of education. Just before his death he had been elected superintendent of schools at Rochester, N. Y. He published a number of school books and several manuals for teachers.

Dr. Curry.

Dr. Jabez Lamar Monroe Curry, the great leader of education in the South, died on February 12, 1903. Dr. Curry was born in 1825, in Georgia. He was graduated from the University of Georgia in 1843 and the Harvard law school in 1845. He was a member of the Alabama legislature from 1847 to 1856, and served in the Mexican war. From 1857 to 1861 he represented Alabama in Congress. In 1861, he was elected to the Confederate Congress, and served in the Southern armies. At the close of the war he became connected with Howard college, Alabama, and later with Richmond college, Virginia. In 1881 he was appointed general agent of the Peabody Fund. In 1885 he became minister to Spain. He continued his work in education until the time of his death.

Dr. Alfred P. Gage.

Dr. Alfred P. Gage, for twenty-seven years a master in the English high school, of Boston, died on March 3. He was graduated from Dartmouth college in 1859, began the work of teaching in North Carolina. He taught first in New England at the Bunker Hill grammar school, in Charlestown, and in 1871 he was transferred to the Charlestown high school, and in 1874 to the English High school. He was best known for his publications in physics, which were used in Boston schools for many years.

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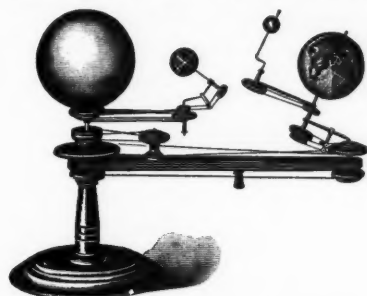
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New York State University Convocation, 1903.

June 29 and 30.

By university ordinance 26, the regents and all officers of any university department; all trustees, instructors, and other officers of institutions in the university; officers of the department of public instruction, of the normal schools, of the state associations of teachers, superintendents, school commissioners and school boards, and others elected by the regents or by convocation council are ex officio members of university convocation. Those holding similar positions in other states and all others interested in education are also cordially invited to attend.

Program.

MONDAY, June 29, 3 P. M.

Informal gathering at headquarters, The Ten Eyck.

MONDAY, 7.30 P. M.

Address, Chancellor William Croswell Doane.
Address, A Constitutional and Educational Solution of the Negro Problem. Regent Charles A. Gardiner.
(At the close of the session there will be an informal reception in the state library.)

TUESDAY, June 30, 9.30 A. M.

Opening address (30 minutes), The Promise and Potency of Educational Unity in the United States, Pres. George E. MacLean, State University of Iowa.
Formal discussion (fifteen minutes), Prof. Albert P. Brigham, Colgate university.
Pres. John H. Finley, College of the City of New York.
General discussion (five minutes), Prin. T. H. Armstrong, Medina High school.
Address (thirty minutes), The Department of Hygiene in Public Schools, Dr. Helen C. Putnam, Providence, R. I.
Formal discussion (ten minutes), James J. Walsh, editor *Medical News*, New York.

General discussion (five minutes), Prof. Duncan C. Lee, Cornell university, Ithaca.

Necrology report, Charles W. Bardeen, editor *School Bulletin*, Syracuse.

TUESDAY, 3 P. M.

Address (thirty minutes), What the West Says, Headmaster Henry White Callahan, State Preparatory School of Boulder, Colorado.

Formal discussion (ten minutes), Pres. Andrew S. Draper, University of Illinois.
Pres. James H. Baker, University of Colorado.

General discussion (five minutes), Prin. Fred Carlton White, Cornwall-on-Hudson High school.

Address (30 minutes), The School as a Social Center, Ossian H. Lang, editor *Educational Foundations* and *THE SCHOOL JOURNAL*, New York.

Formal discussion (ten minutes), Prin. Myron T. Scudder, New Paltz Normal school.
General discussion (5 minutes).

TUESDAY, 8 P. M.

Address, Education and the Social Trend, Pres. Henry Hopkins, Williams college, Williamstown, Mass.

The convocation bids fair to be one of the most successful in the history of that noted assembly. Delegates have already been appointed from Columbia, Cornell, Colgate, Syracuse, and Union universities, and the secretary of the board of regents with the convocation council, have received numerous congratulations on the strong program appended. Every speaker named on the program has promised to be present to participate in the discussions unless prevented by circumstances unknown at this time.

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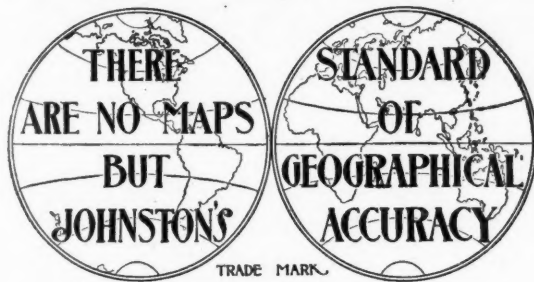
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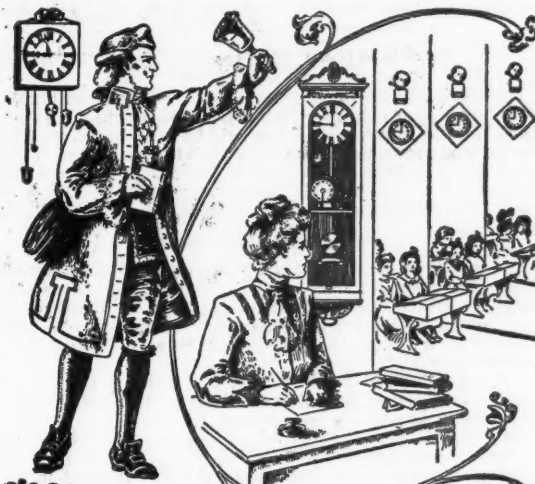
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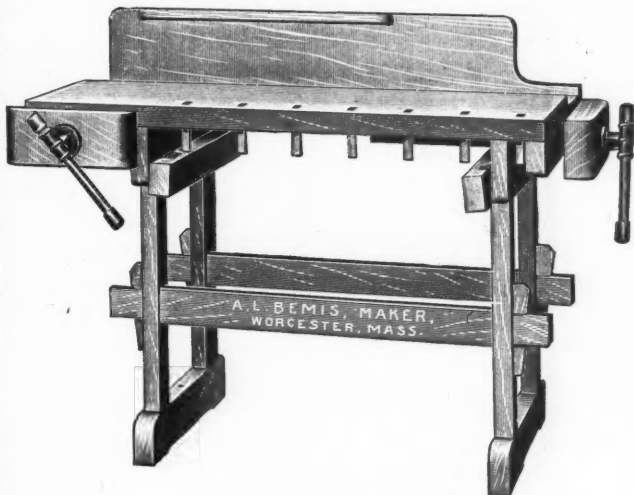
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The membership certificate must be presented and stamped when the delegates receive the official publications and badges. All the following publications will be delivered at one time at the Walker building only. Members who have received their badges in advance must be sure to bring their certificates with them.

The official program will include, in addition to the list of speakers and topics, and hours and places of meeting, such other useful data as are not covered by the other publications. There will also be given a directory of school supply houses, in accordance with the circular letter of March 18, offering, in place of the customary exhibit, "to print in our official program, impartially and without charge, the names and addresses in Boston of all parties who have exhibits germane to the general purposes of the convention, together with a very brief indication of the character of each exhibit."

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A special bulletin will be issued by the school exhibits committee. It is a guide to such laboratories, school buildings, and exhibits of school work as have been selected by the committee, setting forth in detail the arrangements perfected by the excursion committee to facilitate visiting the numerous points of interest. Time-tables, fares, etc., are included.

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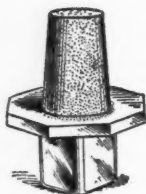


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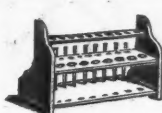
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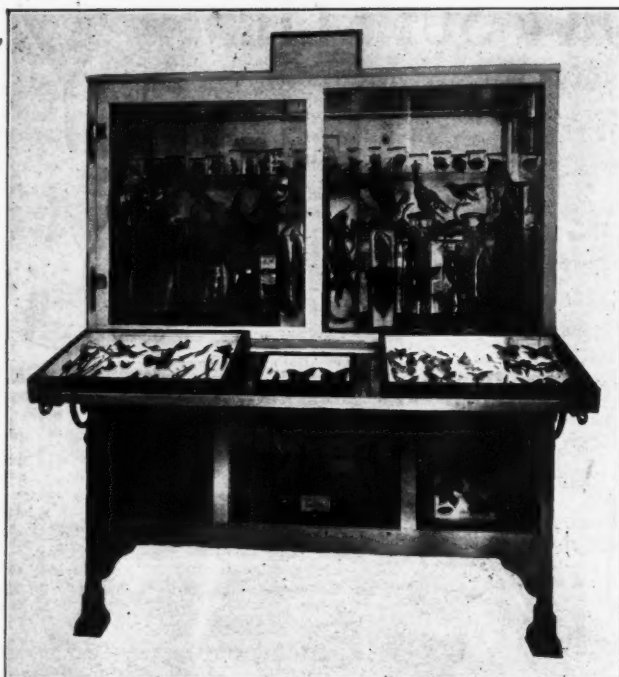
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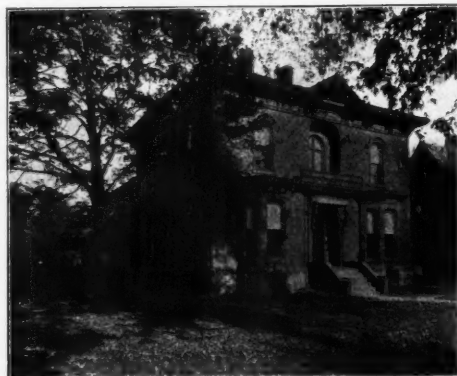
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The Attention of

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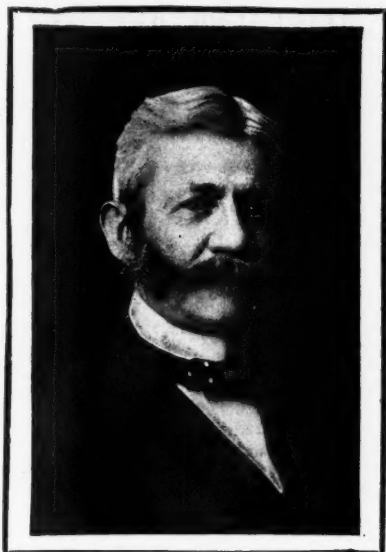
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New Haven, and Hartford R.R. and the Boston & Albany R.R., who are not already provided with accommodations, should check all but light luggage to the South station, but should leave the train at the Back Bay or Huntington avenue station. Delivery of baggage will be facilitated by the reception committee after assignments of accommodations have been made.

All applications for lodgings should be made at the Walker building after registration. Conductors of large parties should telegraph to the local executive committee the road by which they arrive, the hour of the arrival of their train, and the number desiring accommodations of this committee. Those requiring accommodations in hotels should apply directly to the hotels.

The Convention post-office will be located at the Convention club-house, Copley hall, Clarendon street, where all mail and telegrams sent in care of the National Educational Association Convention, Back Bay, Boston, Mass., will be delivered. The post-office will be open day and night, and telephone and telegraph service will be installed in the same quarters.

Boston Hospitality.

The New England states, under the auspices of the American Institute of Instruction, will keep "open house" in the Rogers building, at which all the delegates are welcome. General facilities of every nature will be provided. Committees of twelve ladies will be on hand from Saturday, July 4, to Friday, July 10, inclusive, from 9 A.M. to 6 P.M., to assist the institute in receiving and informing the arriving teachers. These committees will be drawn from the Association of Women of the Institute of Technology, the Boston Teachers' club, the High School Assistants' club, and the Collegiate alumnae. Many teachers from the private schools will also give their assistance.

The Federated Women's clubs will have committees in charge of the state headquarters at the nine hotels in the vicinity of Copley square—the Victoria, Oxford, Nottingham, Brunswick, Berkeley, Vendome, Lenox, Westminster, and the Copley square. These committees will consist of chairman, vice-chairman, and six aides at each of the hotels each day, from nine to six o'clock. There will be an attractive room arranged, decorated with flags, state coats-of-arms, flowers, etc., and the ladies will pour tea and keep themselves fully informed of the doings of the convention and the ways of getting about the city, in order to help the guests.

Copley hall, Clarendon street, will be used as a convention

club-house and will be open from 9 A.M. until 10 P.M. In Copley hall there will be tea and music every afternoon from 4:00 to 6:00, and a number of guests will be invited to meet the delegates.

The College club under Miss Mary Coes, the president, will keep its pleasant club-rooms in Copley hall open from 10 A.M. to 10 P.M. during the convention. Committees of six ladies will be there all the time, will provide desks with writing materials, and will serve tea every afternoon. An invitation is especially extended to all college women.

The Girls' Latin school, Copley square, is to be used as a women's building, where women may go for rest and quiet. The building will be comfortably fitted up with awnings and curtains, comfortable sofas and chairs. A trained nurse will be always there and a doctor on telephone call. The Mayflower club has charge of the tea-room and a committee will be there every day to receive the teachers. The building will be open from 9 A.M. to 10 P.M.

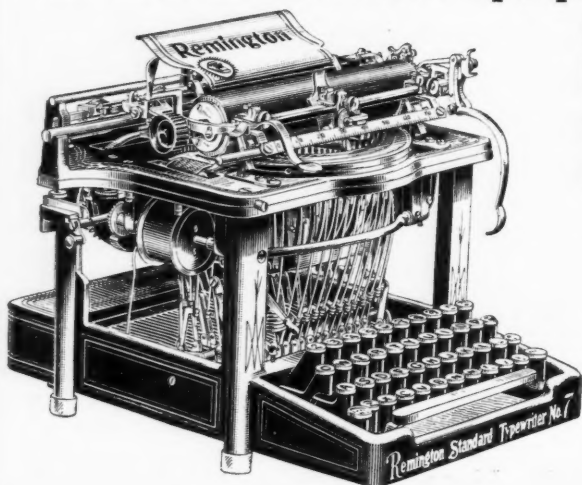
The Catholic Union of Boston offers the use of its building, corner of Washington street and Worcester square, for the accommodation of such of the delegates as may desire to avail themselves of the privilege. An efficient committee, consisting of ladies and gentlemen of the union, will be in attendance each day of the convention. A register will be kept in the rooms, where each delegate may write his or her name and residence while in the city. Accommodations will be provided for writing, the meeting of friends, and the transaction of business.

School Exhibits.

The school exhibits committee will open to the inspection of visitors selected schools and buildings in Boston and vicinity likely to be of special interest. This exhibit will include, in Boston: the Massachusetts normal art school, where the sessions of the department of school administration will be held and in which a specific exhibit of the work of the school will be shown; the Public Latin school and English high school, in which there will be an exhibit of the work in drawing of the public schools of Boston; the Rice training school, in which there will be an exhibit of the work in manual training in the grammar schools of Boston; the Dorchester high school, the East Boston high school, and the South Boston high school, which represent the best types of recent high school architecture in the city; the Mechanic Arts high school, where there will be an exhibit of shop work and drawing; the Bigelow grammar school, the Chapman grammar school, the Paul Revere primary school, the Phillips

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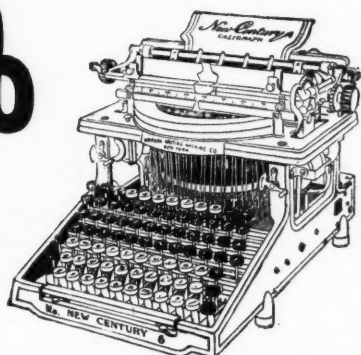
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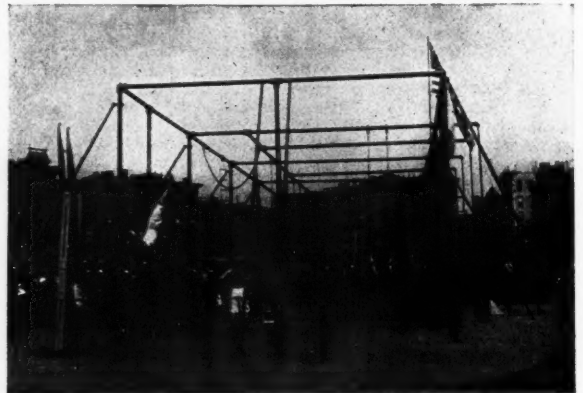
It has won for itself the first place in favor among business men, and stands first among experts for its practical merits. It is the writing machine of the present and the future.

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The Outdoor Recreation League of New York City has done more to bring prominently before the public outdoor gymnasiums than any other institution that was ever organized. There are now in New York City four outdoor gymnasiums and playgrounds in operation: in Seward Park, Hudsonbank, Kip's Bay, and Amsterdam Avenue, and the movement is still in its infancy. Other cities are extending the work, such as Boston—the home of outdoor playgrounds—Chicago, Philadelphia, and Providence.

With this movement the firm of A. G. Spalding & Bros. have kept in touch, and nearly all the prominent gymnasiums that have been put up of late years have been planned and built by them.

PLANS, ESTIMATES, BLUE PRINTS, AND
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JAMES F. COYLE,
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ATTEST: WALTER B. STEVENS,
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Brooks grammar school, the Prince grammar school, the Roger Wolcott grammar school, and the Horace Mann school for the deaf. Two school gardens will be open to the inspection of visitors. The laboratories of the Massachusetts Institute of Technology, Tufts college, and Newton high school will be open on several days; and professors will be in attendance to give all desired information.

In Cambridge: Harvard university will be open thruout the session, and professors will be in attendance in the laboratories during hours to be specified later. The Latin school, the English high school, the Rindge manual training school, and the public library, which form one of the most attractive groups of educational buildings in America, together with the Peabody and the Webster grammar schools will be open for inspection.

In Brookline: the manual training school, opened in 1902, the high school, the natatorium, and the Pierce grammar school.

It is probable also that the Medford high school, notable on account of its art collection, will be included.

All these buildings will be open from 9 A. M. to 5 P. M., July 6-10; and instructors will be in attendance on most of the afternoons.



Walsh's New Arithmetics.

The new series of arithmetics by D. C. Heath & Company, in three volumes, cannot but attract attention from teachers and superintendents. The author, Mr. John H. Walsh, associate superintendent of schools, New York city, is well known as a most competent authority concerning modern methods of teaching, and this fact will at once add to the interest with which the books will be examined.

The books are exceedingly well printed and bound; the paper is excellent; the volumes are handy in size, averaging about 200 pages each. The grammar school problems are put into two books—Part One covering the subjects of Denominate Numbers, Fractions, Decimals, and Elementary Percentage; Part Two embraces Ratio and Proportion, Involu-



View in Main Office of D. C. Heath & Co.

tion, Evolution, Mensuration, and introduction to Algebra and Geometry.

This is an excellent arrangement; we heartily approve of giving the pupils of our grammar schools some idea of the use of letters in calculation, also of lines and angles. For it must be borne in mind that these pupils are more advanced in thought and power than their predecessors were ten, fifteen, or twenty years ago.

The volumes are a good evidence in many ways of the process of evolution that has been going on in the preparation of books for the pupils of our schools. They show that Pedagogy has become a factor of power. The entire question is not what should a pupil of such and such an age know, but, how shall these matters be taught. There is excellent pedagogical workmanship in these volumes.

The Primary Arithmetic is for pupils of the second, third, and fourth school years; it is put into five chapters, the first furnishing work for the second year; the others for a half year each. Over this book we have lingered with pleasure, for the ingenuity with which the intricacies (to a child) of figures are managed is admirable. Instead of completing the subject of addition before subtraction is taken up (the usual

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Premium Income.....	\$2,760,245.52	\$5,727,689.21	\$2,967,443.69	107.51
Income from Interest and Rents.....	\$623,414.25	\$1,235,433.33	\$612,019.08	98.17
TOTAL.....	<u>\$3,383,659.77</u>	<u>\$6,963,122.54</u>	<u>\$3,579,462.77</u>	105.79
Assets December 31.....	\$13,433,668.21	\$30,960,145.22	\$17,526,477.01	130.47
Amount Insured December 31.....	\$78,467,497.00	\$158,703,802.00	\$80,236,305.00	102.25
Surplus December 31.....	\$1,090,858.83	\$2,606,025.25	\$1,515,166.42	138.90

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Assets, December, 31, 1902, \$30,960,145.22 Liabilities, \$28,354,119.97 Surplus \$2,606,025.25

AGENCIES IN ALL PRINCIPAL CITIES

way) both are taken together, for this is the child's way. Nothing can be neater than the plan of enclosing important directions in a frame; the attention is easily attracted.

We have been greatly pleased with the method Superintendent Walsh adopts in teaching Fractions—(Chap. 4); for the difficulties that usually beset the child are so taken up by the principle of gradualism that he is not conscious they are difficulties. The pupil begins and adds easy mixed numbers, then subtracts, multiplies, and divides; so that one-half, two-thirds, etc., in figures are perfectly comprehended.

While the use of many problems and the application of gradualism are the main features yet these are employed by one who evidently understands children and their ways of acquiring knowledge. But one in ten thousand who can "do" all the "sums" in their books could undertake to make an arithmetic suitable for children; but to make one showing how a patient, skilful, loving, and child-understanding teacher teaches a child the mysteries of figures, only a very few will be sufficiently gifted. We think Superintendent Walsh has made a remarkable success of his undertaking.

The Grammar School Arithmetic is in two parts, but we

judge it may be bound in one volume. Of this we can say that it combines, as does the Primary, the spiral and topical arrangement so as to give thoro and practical drill, alertness, skill in analysis and thoro review. We note many new and ingenious exercises; a wise selection of problems; most careful definitions; and explanations that are marvels of clearness. It seems to us that a poor teacher would be made into a good one by having the benefit of the wise and helpful pedagogical suggestions to be found in these books; and yet we have never seen any books that are more available for the pupil who is without a teacher; this is especially true of the last two volumes of the series.

Part One of the Grammar School Arithmetic begins with some valuable suggestions, and there are four chapters presenting Fractions, Decimals, etc., including Percentage and Interest. These are made clear, one difficulty being taken up at a time. Part Two takes up Ratio, Involution, etc., and deals just enough with algebra and geometry. The series is plainly one that is going to attract more than ordinary attention. The keynote is practicability. They show how Figures may be taught in a clear and practical manner. We commend them most heartily.

Visiting List for Boston and Thereabout.

Clark university summer school will be held at Worcester, Mass., July 13-25. President Hall will lecture on "Pedagogy of the High School," Professor Burnham on "Hygiene of Instruction," Professor Sanford on "Psychology of Learning and Teaching," Professor Hodge on "Nature Study and Life," with daily laboratory, field work, and excursions; Professor Chamberlain on "Comparing Primitive Peoples with Children and Youth," and Dr. Goddard on "Neurology." For circulars address Louis N. Wilson.

During the summer examine carefully the list of publications of Benjamin H. Sanborn & Company, of Boston and Chicago. It will be noted that there are a large number of Latin books of excellent quality, for high school and college use. Teachers will find their paper edition of *Town Life in Ancient Italy* of especial value. The Cambridge Literature Series, under the editorial supervision of Thomas Hall, Jr., of Harvard university, must not be overlooked. It comprises many of the best English classics. Besides there are Greek, mathematics, science, and other subjects represented. These books rank among the first in every respect.

The appearance of King's Elementary Geography this month is an important event in the new school-book work of the Lothrop Publishing Company of Boston. Its publication of Smith's "Training for Citizenship," a new text-book in civics, introduced this house to the school public some months ago.

The Practical Grammar, by Superintendent Sayrs, was brought out early this year, and now comes the first book of this important series of geographies by Mr. C. F. King, who is known thruout the country as a successful teacher of the subject, an author of geographical readers, and a contributor of geographical articles to magazines. The advanced book of the series is in active preparation.

If manual training is attempted the work-room ought to be fitted up in a proper manner, and this can be done by using the articles of A. L. Bemis, of Worcester, Mass. How delighted a boy must be when placed by one of their beautiful work benches. A catalog of these and other articles will be sent on request.

The books of the Dunton and Kelley's Inductive Course in English, of Thompson, Brown & Company, are for the primary and grammar grades, two of the books being for the latter. Nichol's Progressive Arithmetics, three books, have just been issued.

The Medial Writing Books for primary schools, issued by Ginn & Company have qualities to which attention is called. The writing is legible; it makes speed

possible; it is graceful; it prevents back slant writing. The books are well adapted to the smaller desks now commonly used in primary grades; they may be used alternately with the larger course. Such books as the Mother Tongue Series, Fry's Geographies, Cyr's Readers, Montgomery's Histories, Wentworth's Arithmetics, Blaisdell's Physiologies are so well known that it is only necessary to mention them. The firm's books on nature study are by some of the best writers in this field—Long, Holden, Jane Andrews, and others.

Little, Brown & Company.

The book-selling and publishing firm of Charles C. Little and James Brown, which began business in 1837 on the same site in Boston, 254 Washington street, as is now occupied by the present firm of Little, Brown & Company, succeeded Hilliard, Gray & Company, who had, for more than half a century, done a large business in classical books, in text-books for colleges and academies, and in law books. As the successors of Hilliard, Gray & Company, the house of Little, Brown & Company is the oldest book and publishing house in Boston, and is in the second century of its history, its origin dating back to 1784, when one, E. Battelle, kept a book-store in Marlboro street, being that part of Washington street south of School and north of Eliot.

It is, therefore, safe to say that, in its line, the house is the oldest in Boston. It has been, almost from the beginning, the leading publishing firm of law books in America, including in its list such famous authors as Kent, Story, and Greenleaf among the early law writers, and a majority of the notable and standard legal authors of the last quarter of a century. In general literature the firm has issued many notable books, including the works of the greatest American historian, Francis Parkman, Bartlett's Familiar Quotations, the writings of Captain A. T. Mahan on the Influence of Sea Power upon History, Soule's Synonyms, etc.

The present members are John Murray Brown (the youngest son of James Brown), Charles W. Allen, Hulings C. Brown, and James W. McIntyre.

In 1898, the publishing business of Roberts Brothers was purchased, and, in taking over the publications of this well-known Boston firm, Little, Brown & Company came into possession of several authors and books of widely recognized literary worth, for many of which there have been phenomenal sales.

At present, over 1,000 different titles of books in general literature are cataloged by this firm, while the number and importance of the law publications has been constantly increasing.

In addition, the subscription books of this house have an international reputation, including, as they do, the collected writings of Francis Parkman, Alexandre Dumas, Charles Lever, Captain Marryat, Samuel Lover, Edmund Burke, Lord Lytton, Alphonse Daudet, and Daniel



Webster, the new national edition of the latter's collected works being the latest addition to the firm's subscription books.

Considerable attention is being devoted to supplementary reading and school library books.

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The neglect to preserve text-books or library books as they may be preserved by it is a great waste. The system includes waterproof and germproof leatherette book covers; self-binders for repairing broken and weakened bindings, and for fastening in loosened leaves; transparent paper, for mending torn leaves without destroying the legibility of the printing. The Holden Patent Book Cover Company, Springfield, Mass., will send samples and information. Hundreds of towns are using the Holden system. We select a few from among the testimonials received from various towns:

Passaic, N. J.: "Economical as well as hygienical, resulting in saving many times their cost."

Plainfield, N. J.: "I deem book covers absolutely essential where free text-books are used."

Poughkeepsie, N. Y.: "Your book

covers have been in use here for several years and have proved so helpful in preserving our books that we now cover every book sent out to the teachers and pupils with your patent cover."

The Outdoor Recreation League, of New York city, has done much toward fitting up of outdoor gymnasiums. The firm of A. G. Spalding & Bros., Chicopee Falls, Mass., is connected with this movement, and will furnish plans, estimates, and blue prints to those who wish to begin such a work.

Give the child something to do—that seems to be the leading thought in modern education. This is the idea that is enforced by "What We May Do," a book of sewing patterns—forms of life in straight lines, arranged by Anna W. Devereaux, supervisor of kindergartens, Lowell, Mass., and published by the Milton, Bradley Company. The designs are practical and artistic and arranged for the purpose of helping kindergartners and primary teachers and pleasing the children.

The Massachusetts Mutual Life Insurance Company has made wonderful progress in the past ten years, as may be seen by its report. From 1892 to 1902, it gained \$2,967,443.69 in premium income and \$612,019.08 in income from interest and rents. Its increase in assets was \$17,526,477.01; in amount insured, \$80,236,305, and in surplus, \$1,515,166.42. Since its organization a little over a half a century ago the company has paid \$23,599,962.33 in death claims; \$3,935,315 in endowments matured, and \$11,086,018.90 in dividends. This is a wonderful record. The company has agencies in all the principal cities.

Notes of General Interest.

The Thomas Normal Training school is doing a work that no other school in the country is doing. It is training young men and women to teach music, drawing, physical culture, penmanship, domestic science, and manual training sloyd. No other school in the country is devoted exclusively to these branches. Address Louis A. Thomas, secretary, 550 Woodward avenue, Detroit, Mich.

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The change of seasons, day and night, changes of the moon, eclipses, and other phenomena we know are due to changes in the relative positions of the planets. These changes are puzzling, even to the adult how much harder, then, will they be for children to understand. Laing's Planetarium makes everything clear. Every school, college, and home should

have one. The Laing Planetarium Company, of Detroit, Mich., will send a descriptive booklet on request.

Send for a description of normal institute supplies to Crane & Company, Topeka, Kansas. Among these are the Normal Institute Reader, teachers' note books, and other aids. Examine also their beautiful set of readers, Ferrell Arithmetics, Wooster Primer, and other publications. They are rapidly gaining ground on their merits.

If any of our readers wish to study a modern European language they will find the help they need in the Hossfeld's Educational Works of John Lane, 67 Fifth avenue, New York. Among these books are many in French, German, Spanish, Italian and Dutch. Schools and teachers are invited to write for complete catalogs and specimen copies of the series which will be sent free.

One can have his choice of many dictionaries on the list of Laird & Lee, Chicago, but the one that will meet the needs of the largest number is Webster's New Standard Dictionary of the English Language. It is a splendid book—convenient in size, easy of reference, reliable, and moderate in price. The binding, type, illustrations, and general make-up leave little to be desired. For one who is studying Spanish the Salva-Webster Dictionary is desirable, as is also the Grimm-Webster for one who is studying German, and the Litte-Webster for one who is studying French. Our Children Among the Poets is one of the most important books recently published. It contains selections from American and foreign authors which especially appeal to youth. Teachers and parents should read the New Tokology, by Drs. Eli F. Brown and Joseph H. Greer.

From now until September hundreds of school boards will have dealings with the American School Furniture Company, New York. In all lines of furniture for educational institutions they are prepared

to furnish the most modern and the best quality of furniture. They produce every variety of desk, chair, and settee for school, college, or university. Some of the kinds that may be mentioned are desks for schools of commerce, laboratory furniture, seating for assembly halls, lecture room chairs with tablets, adjustable desks, etc., all of which are fully described in catalogs and circulars which will be sent on request.

Attention is called to a condition that must be confronted both by manufacturers and purchasers of school furniture. The demands of labor unions and the enormous jumps in prices in the iron and lumber markets during the past few years, have materially enhanced the cost of production. Reputable manufacturers have found they must either advance prices or lower the quality of the goods; the latter they are naturally loath to do. An investigation shows there is but slight advance compared with the old prices, and as compared with the cost of all other commodities.

We hear a great deal about the need of instruction in morals in the schools, and all agree that merely to train the intellect is to neglect the more important part of the child. Dr. Mary Wood-Allen seems to have got at the foundation of the subject in her "Teaching Truth" series of purity books, the object of which is to give the pupils, in the clear light of science, an adequate understanding of their own bodies and sexual organisms. The psychical influence of proper knowledge on this important subject insures pure living in the present and future and relegates the lower nature to its legitimate place.

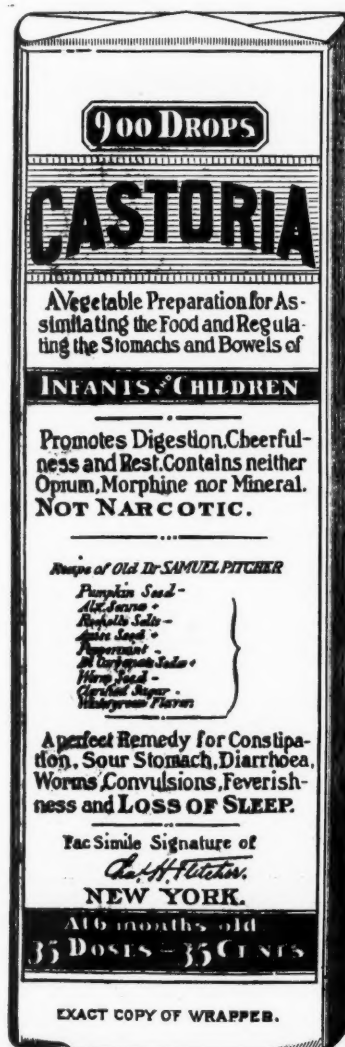
A new two-book series in arithmetic, known as the Woodward Series, has just been issued by Woodward & Tiernan, of St. Louis, Mo. There is a book for primary and elementary grades and one for advanced grades embodying the latest approved methods. They publish *Elementary Lessons in English* and *Advanced Lessons in English* and a *Primary Speller* and an *Advanced Speller*. Besides there is a five-book series of readers, carefully graded thruout, leading the child, step by step, to an intelligent appreciation of good literature. These books are widely used in the Middle West and South.

It is hardly necessary to call the attention of purchasers of text-books to the list of the American Book Company, as there is scarcely a locality in the United States where their books are not more or less used. These books cover practically all subjects and meet all demands of educational institutions from the primary school to the university. We would note especially the great variety and high excellence of the language books, readers, and geographies. In the teaching of business methods, a very useful work is *Modern Illustrative Bookkeeping*, in the Williams & Rogers Series. It is especially adapted to the use of high schools. Its main features are the simple and natural way the subject is introduced and developed, the careful grading of the work, the representative character of the special lines of business treated, the ease with which the work is supervised by the teacher, etc. One of the newest publications is *Modern Business Penmanship*, by E. C. Mills, a series of muscular movement exercises and lessons based on the natural slant.

One great essential both to the comfort of the children and the success of the school work is the admission of the light in a proper manner. It is believed the problem is satisfactorily solved by the Johnson Window Shade Adjuster, of R. R. Johnson, Chicago. There are no rods or chains to get out of order. It is simplicity itself. Send for free sample and booklet.

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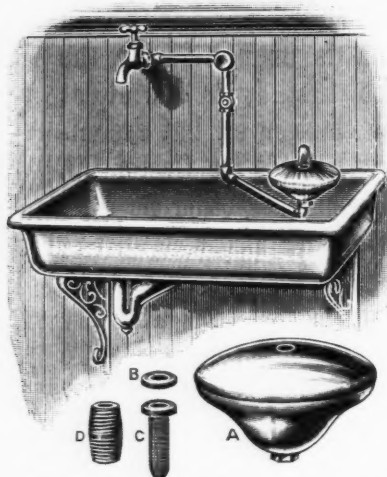
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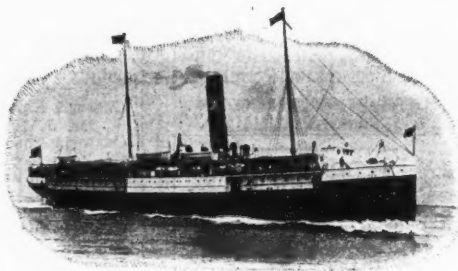
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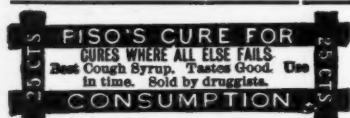
The spread of disease has no doubt been assisted in many cases by children drinking out of the same cup. Inventors have been stimulated to find a substitute. A successful device has been patented by Charles H. Smith, a mechanic in the Yale psychological laboratory. It is really a little fountain from which the child drinks, and thus avoids the danger of infection.

A two-volume work on Descriptive Geometry, by Prof. William S. Hall, of Lafayette college, has just been published by D. Van Nostrand Company. It is an atlas quarto and has illustrated problems and many practical applications. The chapters deal with first principles, point, line, and plane, curves, and tangents to curves, and surfaces.

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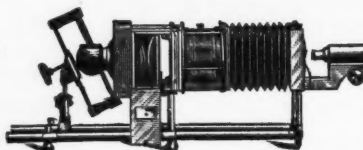
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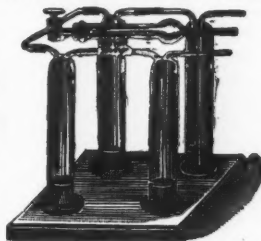
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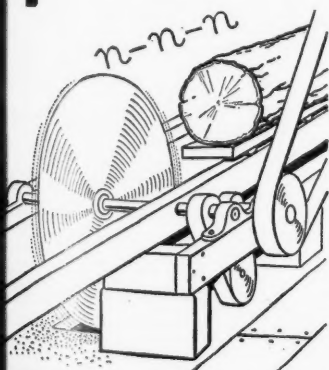
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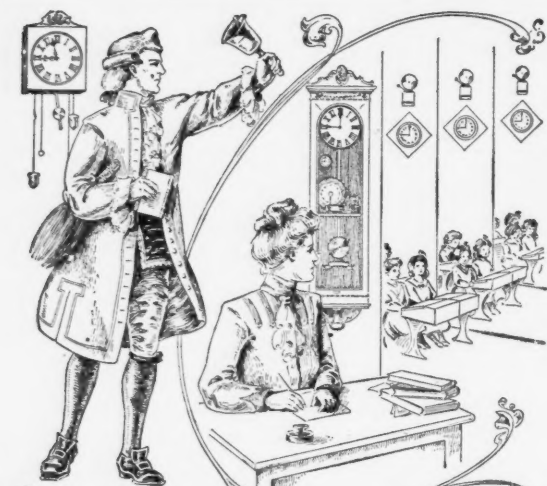
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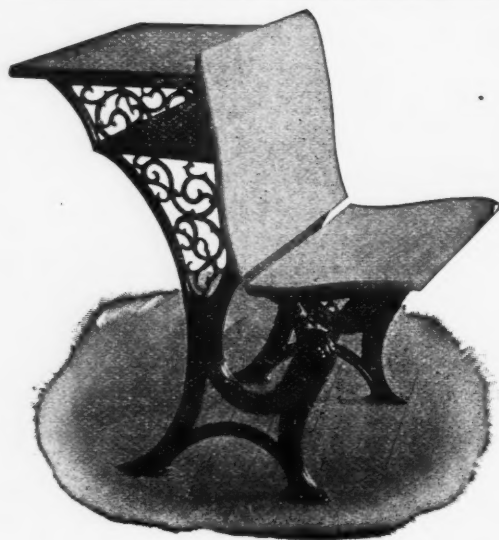
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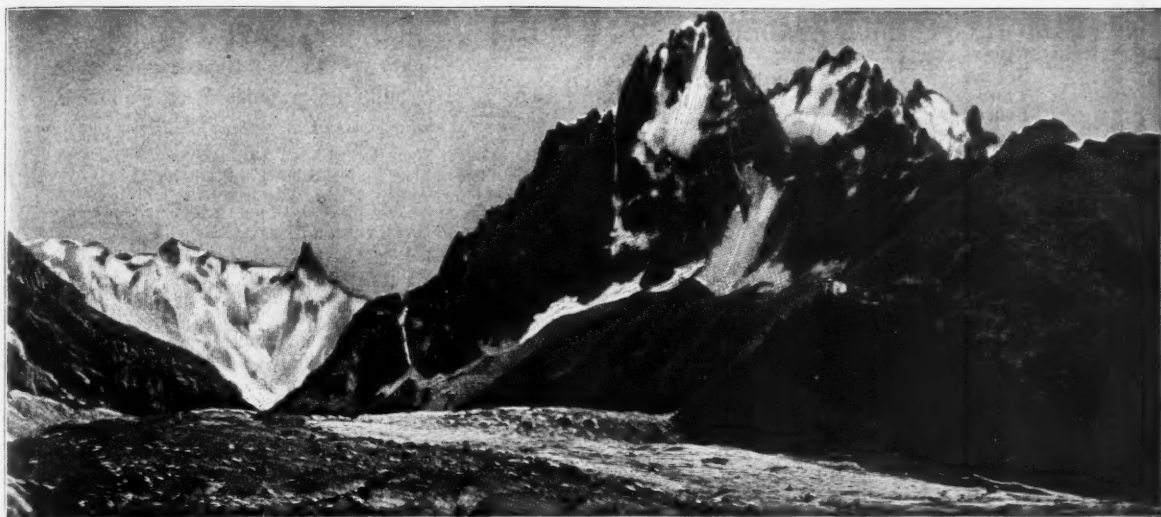
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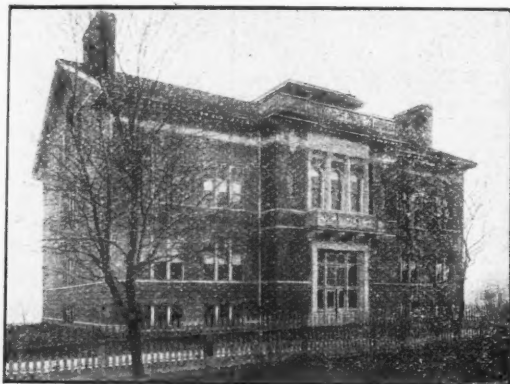
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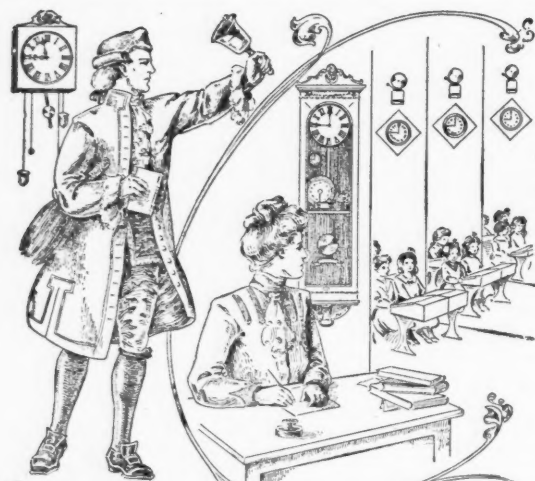
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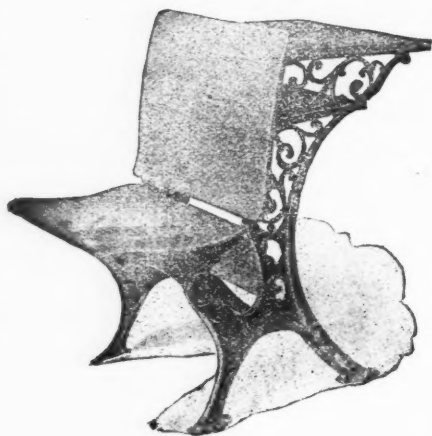
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The Company's calculations have been based on \$5.00 ore whereas the ore in sight now averages over \$15.00 per ton, and frequent assays recently established much higher values as we shall be glad to show you if you will write us. But even supposing that the ore in the Bullion which our expert says will furnish us 500 tons per day, will only average \$10.00 ore which we can treat at \$3.00 with a profit of \$1.00 for the smelter, after marketing this ore we will be well within the most conservative fact by reckoning on 15.00 per ton extra profit from the sale of ore. The Company's earnings will run well into the millions easily and thus give its stock a high intrinsic value.

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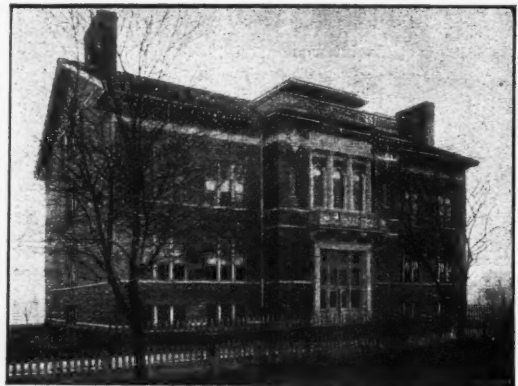
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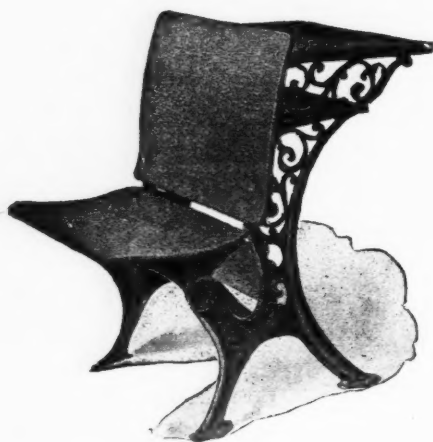
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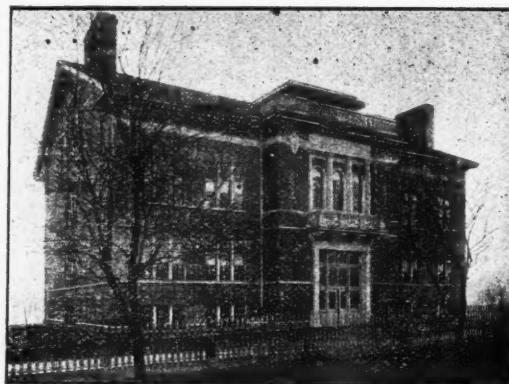
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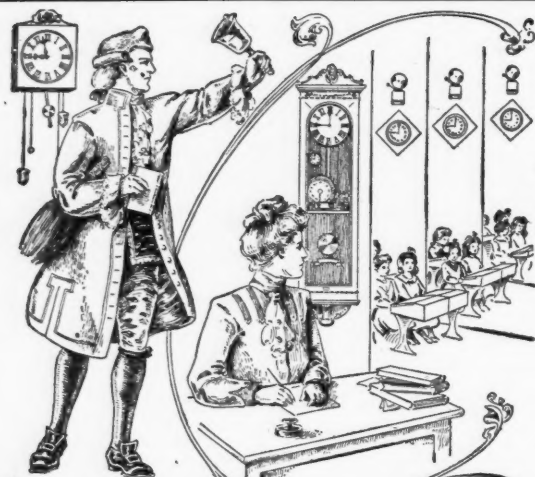
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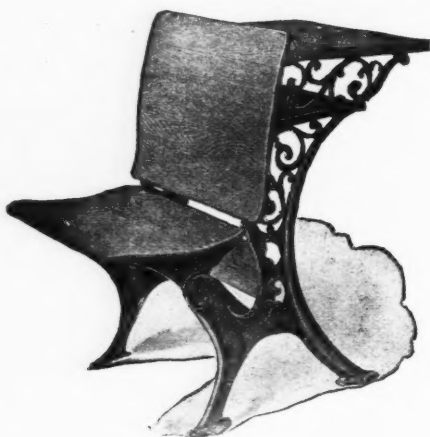
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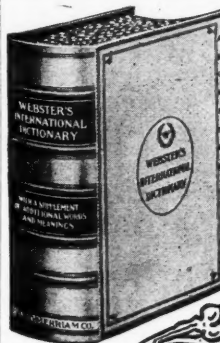
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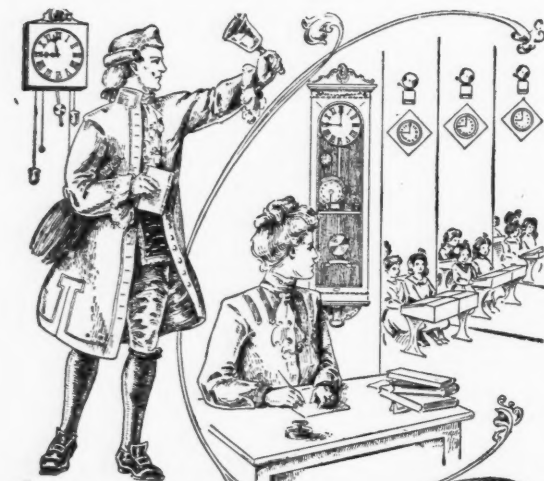
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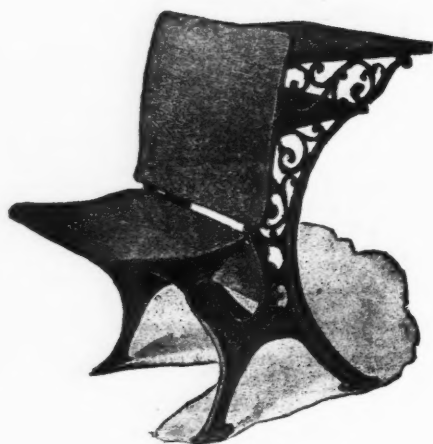
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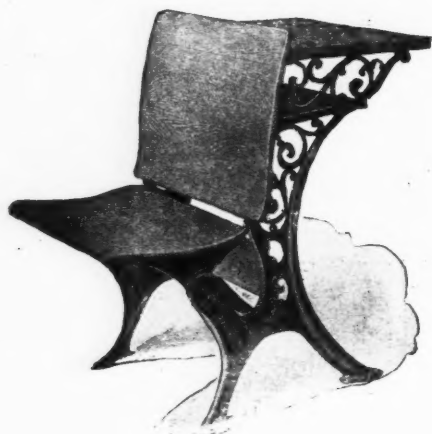
		
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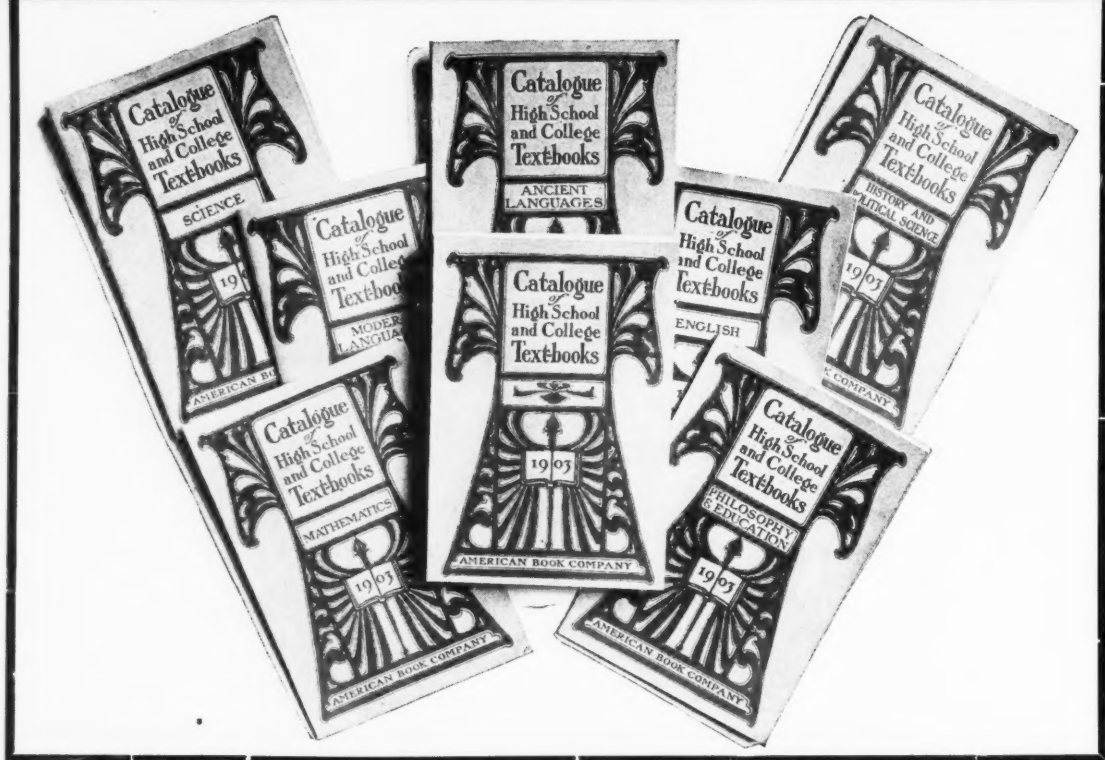
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